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To undertake a comprehensive study and review of educational programs at Stanford University, President Sterling in 1967 appointed the Steering Committee for the Study of Education at Stanford. This report on graduate education is the 7th in a series of 10 issued by the Committee. A discussion of selected principles and philosophies in graduate education is followed by a recommendation calling for the establishment of a Commission on Graduate Education. This Commission would be charged with conducting a study of Stanford's problems in graduate education with special emphasis on PhD programs. Twelve further recommendations call for the modification or elimination of certain present and the establishment of new procedures within the graduate schools. In lieu of formal recommendations, 4 proposals for further consideration are submitted dealing with possible procedural modifications that the Committee was unable to analyze in adequate depth. Extensive appendices contain memos, statements, proposals, and minor reports submitted to the Committee during the course of the study, as well as specific research findings of the Committee. Copies of this report, or the set of 10, are available from the Study of Education at Stanford, Stanford University, Stanford, California 94305. [Not available in hard copy due to marginal legibility of original document]. (DS)

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The Study of Education
at Stanford

Report to the
University

VII

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Preface

This is one of a series of reports, which we submit to the University community for its consideration. The first of our reports, *The Study and Its Purposes* stated the general premises on which our recommendations turn. The remainder of this series, in the approximate order of issuance, includes the following:

- II. *Undergraduate Education*
- III. *University Residences and Campus Life*
- IV. *Undergraduate Admissions and Financial Aid*
- V. *Advising and Counseling*
- VI. *The Extra-Curriculum*
- VII. *Graduate Education*
- VIII. *Teaching, Research, and the Faculty*
- IX. *Study Abroad*
- X. *Government of the University*

Comments on these reports, and requests for copies, should be addressed in writing to Study of Education at Stanford, Room 107, Building 10A, Stanford University, Stanford, California 94305.

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The Study of Education at Stanford

March 1969

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The Study of Education at Stanford

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Graduate Education

Report
of the
Steering Committee

The following report includes a discussion of selected issues in graduate education, recommendations, proposals for further consideration, and extensive appendix materials. Our first and major recommendation, that a commission be created to study in greater depth Stanford's problems in graduate education, emphasizes that this report is basically a working paper. Where the issues were felt to be clear and the desired direction unambiguous, we have made formal recommendations; for the most part, however, we present proposals needing additional scrutiny and discussion by all members of the Stanford community. With a view to starting this process, we include as appendices several resource papers that discuss a variety of aspects of graduate education and provide information, perspectives, and interpretations that extend–and occasionally diverge from–the material in the body of the report.

Introduction

Writers on American education are fond of pointing out that ours is a pluralistic system. Control is decentralized and diverse. Student bodies differ widely, especially at the college level, with regard to a range of characteristics from religion to intellectual capacity. Environments vary from bucolic to highly urban. Yet cutting across all these differences is a remarkably uniform pattern of education—from kindergarten through college. Timing, curriculum, and method are, for the majority of students and institutions, more alike than different.

But at the level of graduate education, the similarity among programs is sharply reduced. First there is the distinction between graduate programs in fields such as medicine, law, and business, where the primary emphasis is on professional practice, and graduate programs in the arts, sciences, and engineering, where the stress is divided: masters and similar programs emphasize teaching and practice while doctoral programs concentrate on research capability.

This mix of emphasis varies among institutions. At many universities the professional programs are wholly geared to practice, while at a number of institutions, including Stanford, "professional" programs are strongly research oriented. In the other graduate programs at most universities there is a division of concentration between practice-oriented master's degree study and research-oriented doctoral programs. At Stanford the stress on doctoral work is stronger, with only a few Humanities and Sciences departments, and the School of Engineering, accepting students whose principal goal is a master's degree.

This variation in aims among graduate programs makes it nearly impossible to generalize about broad problems and contributes to the frustration of a number of nation-wide efforts to deal with extant problems. Variability within a single institution is an additional confounding factor, which will be dealt with below.

The consensus of those with whom we have discussed the matter has shown little need for intensive University-wide concern with the professional (as distinct from Ph.D.) programs in medicine, law, business, education, and engineering. Each of these has a uniform curriculum, often followed by a certifying examination administered by an outside agency of the profession. They are in marked contrast to Ph.D. programs, which are essentially hand tailored to meet the needs and interests of individual students. Each professional program is characterized by early socialization of students and common professional standards. Each is relatively large and well organized to deal with its own problems. Thus the observations and recommendations that follow do not relate directly to these professional programs. We believe there are principles in our general suggestions that are applicable to the professional schools; promoting this applicability, however, is not our primary goal.

The remainder of this report relates primarily to Ph.D. programs at

Stanford, and to some extent to associated master's programs. The exclusion of all other programs no doubt simplifies our task, but it does not eliminate the problem of variability in goals, emphases, and practices. In the winter quarter of 1968, the Steering Committee sent to all Ph.D.-granting departments a tentative statement of its views in selected "problem" areas and requested departments to respond to the following twelve questions:

1. Should the route to the Ph.D. be broadened so as to permit award of the degrees to students whose primary interest is a teaching rather than a research career?

Or would you prefer the establishment of a teaching degree such as the M. Phil.? On the other hand, do you find the present program and degree structure satisfactory?

2. Should dissertation specifications be amended so as to permit an alternative to the present research emphasis?

3. Should Ph.D. candidates be required to do some intensive supervised teaching as a regular part of their graduate program?

4. Should the graduate course structure and calendar be more flexible than at present?

5. Should faculty evaluation and judgment, more thorough comprehensive examinations, and the accomplishment of certain specified tasks or projects, replace courses and units as a principal measure of progress to the Ph.D.?

6. Do you favor a plan under which each graduate student is attached to a faculty tutor and the tutor assumes major responsibility for guiding and evaluating the student's progress?

7. Should the present nine-quarter residence requirement be dropped?

8. Should course letter grades be dropped as a measure of graduate student performance, to be replaced by evaluative statements that would become part of the student's record?

9. Should a more refined system of evaluating performance in comprehensive written and oral examinations be introduced to replace the present simple pass-fail structure?

10. Do you favor more active recruiting of graduate students?

11. Should Stanford undergraduates be eligible for admission to your graduate department for full Ph.D. study? For a shorter period of graduate study preliminary to Ph.D. work elsewhere?

12. What other major problems (excluding budgetary problems) confront your graduate programs, and what solutions do you recommend?

A detailed summary of the responses received can be found in Appendix 1 to this report. Our interest here is in the relative lack of unanimity in the responses received from 39 schools and departments of the University. Three of the possible actions proposed in the questions received better than 50 percent support ("Yes" responses to questions 3, 10, and 11), only one of which exceeded 75 percent (87 percent said that Stanford undergraduates should be equally eligible for admission to graduate departments). Two questions (2 and 9) received a better than 50 percent "No" vote (62 percent and 64 percent respectively). Evidence of departmental variability in policy and practice can be found in Appendix 2, which summarizes the responses to selected interview questions put to departmental chairmen in Humanities and Sciences.

Further areas of variability were uncovered in a questionnaire survey of graduate students in 12 selected departments at Stanford, conducted as part of a wider study by the Center for Research in Higher Education at the University of California at Berkeley. The results are reported in Appendix 3 and reveal wide differences in student attitudes toward their graduate work. For example, in one science department, 85 percent of the students report having received "adequate" encouragement to persist toward goals, as compared with 22 percent in a humanities department. Students in the same science department overwhelmingly agree (92 percent) that their faculty advisers are the "most helpful" channel for verbal communication of information; in one social science department, 17 percent of the students made this response.

These wide differences were a handicap to us in our own examination of graduate programs. Our ability to reach general conclusions about the needs of graduate education was hampered by the parochialism of our own experience and the lack of time to deal in depth with this problem along with the many others we were asked to review. Were we to begin the Study of Education at Stanford over again with the benefit of present insights we would probably appoint a special topic committee to deal exclusively with graduate education just as we did for such areas as admissions and residences. The need for such concentrated study is manifested in the first and most important of our recommendations in this report, which calls for a major review of graduate problems and lists a number of problems that need study.

That there are serious problems in some areas is clear from the papers and survey results in the appendices, from the most casual conversations with students, and from a review of the drop-out record, to say nothing of the most recent and barely averted threat of a strike by graduate students serving as Teaching Assistants. A precise figure on drop-outs is unavailable since it is not always possible to separate Ph.D. aspirants from those seeking other advanced degrees, but as knowledgeable an observer as the present Dean of the Graduate Division suggests that as few as one third of those who enter Stanford to pursue the Ph.D. may achieve that goal. Those who are lost include large numbers of students who complete all requirements except the dissertation, thus contributing to the national bottleneck at the Ph.D. level.

One of our number, Professor Mark Mancall, made a study of graduate education, and his conclusions are reproduced as Appendix 4. His essay highlights problems that are most intensely present in some of the humanities and social science programs.

Quite expectedly, this report and its recommendations concentrate on *problems* in graduate education. Committees charged with conducting a critical review are inclined to concentrate on things that need correcting rather than to point with pride. Yet we do not wish to leave the impression that all is grim. By any objective standard, Stanford's graduate programs are successful and continually improving. One appraisal is contained in the review conducted in 1964 by Allan M. Cartter, *An Assessment of Quality in Graduate Education.*[1] This study obtained estimates of the quality of graduate faculties and the effectiveness of graduate programs from a broad sample of junior and senior scholars at American universities. Stanford conducts graduate programs in 26 of the areas covered by the report. The Stanford faculty was rated "Distinguished" in 10 of these fields, "Strong" in 14 others. The median faculty rank for all Stanford programs included on the list was 7th among the 106 U.S. universities studied.

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[1] Allan M. Cartter, *An Assessment of Quality in Graduate Education*, Washington, D.C.: American Council on Education, 1966.

In terms of effectiveness of doctoral programs, Stanford fared even better. Sixteen were rated "Extremely Attractive" and 9 as "Attractive." The median rank was 6th among the 106 universities. Two (Psychology and Electrical Engineering) were judged the best in the nation on the effectiveness scale. It is especially notable that in every case the Stanford doctoral programs were ranked as high as or higher than the respective faculties.

The Need for a Major Study

Given the complexity and diversity of graduate education, and the fact that major problems do exist at least in some areas, we concluded that a new, major study of graduate education is urgently needed. It must include the steps of thoroughly analyzing graduate education at Stanford and at other leading universities and reviewing the findings of such national studies as that presently being conducted by the Carnegie Commission on the Future of Higher Education.

The study should be carried out by a commission selected to reflect the importance of its task. The commission should be supported by a staff, by sufficient funds to permit gathering of data through surveys, studies, and consultation, and, most important, by the provision for its members of partial relief from other duties.[2] At the conclusion of this report, we suggest some agenda items for the proposed study. In general, we recommend that:

1. The President, in consultation with the Academic Senate and the Graduate Students Association, should appoint a Commission on Graduate Education charged with conducting a study of Stanford's problems in graduate education, with especial emphasis on Ph.D. programs. Its work should begin with a determination of the various departments' specific policies, goals, and problems in graduate training and should seek to obtain student and faculty views on the adequacy of existing programs.

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[2] In the light of hindsight, the most serious error in the arrangements for the current Study was the failure to provide relief from other duties for the members of the Steering Committee other than the chairman and for topic committee chairmen.

Common Features of Ph.D. Programs

Thus far in this report we have stressed the diversity among graduate programs and the consequent complexity of their problems that caused us to recommend a more careful study than we have been able to conduct. Nevertheless there are some common features among Ph.D. programs that lead us to make several specific recommendations.

First among these common features is the high level of school and departmental autonomy (which is, of course, largely responsible for the variability we have noted). Decisions regarding the appropriateness of many of the recommendations that follow, and the suggestions that we submit to the proposed Commission, rest with individual departments, and we recognize that there will always be some departments with sound reasons for deviating from what others find best (or better). Furthermore we recognize, and we ask others to recognize, that our proposals are not intended to be equally applicable to all Ph.D. programs. There is evidence, for example, that the problems on which we focus are more keenly felt in departments of social science and humanities. In all departments, however, we urge that our recommendations and proposals be the subject of much thought and discussion between students and faculty. While we do not wish needlessly to call "Wolf, Wolf!" the fact that specific problems are not obvious does not, unfortunately, imply that they do not exist or are not imminent.

A second common feature of Ph.D. programs is the sequence of steps or phases of graduate study. We see at least three essential stages: first, the acquisition of a body of basic knowledge and an understanding of the discipline's methodology; second, a closer examination of a few specialized areas within a discipline; and third, an application of the knowledge and principles acquired in the first two stages in original individual work, which is the principal mark of an accomplished professional in any academic field. While passing through these stages, graduate students acquire more than academic skills, knowledge, and abilities; through interacting with faculty members and fellow students, serving as teaching or research assistants and undergraduate advisers, participating in University or community programs, or serving on student-faculty committees–through these experiences, with varying degrees of success, students try to define the roles they wish to perform as professionals. In our view, it is worthwhile to encourage students in these attempts where they do not interfere with the formal academic work;

equally important is the provision of a sufficiently flexible program to allow students to pursue goals seen as relevant to the professional roles they seek to perform. Without opportunities to articulate goals and academic work, inappropriate goals will not be recognized as such, and academic work will seem irrelevant. As early as possible in the career of a graduate student, his department should decide that he either is or is not capable of profiting from and contributing to the program it provides. Each affirmative decision must carry with it a strong departmental commitment to that student; this commitment, we think, in turn requires the recognition and support of individual goals to the limit of a department's scholarly competence and goals.

University Regulations & Policies

As we pointed out above, the details of Ph.D. programs are and should be worked out by each department to suit the needs of its own field. University requirements should therefore be stated in broad terms, taking form only upon departmental interpretation. The nature and schedule of examinations is a case in point. Policies that are essentially governed by the individual departments are dealt with later. Here we concentrate on those University regulations and policies that apply to all Ph.D. students (and to many others as well).

Residence Requirements

The existing residence requirement, which calls for the equivalent of nine full quarters of enrollment as a graduate student, serves little useful purpose. For the rare student who is able to complete his doctoral work ahead of this schedule it can only act as a brake. If the object is economic—to collect a certain amount of tuition in exchange for the privilege of earning a degree—it is a delusion. Graduate instruction costs far more than the tuition it generates, and that tuition is in a great many cases effectively returned to the student through grants and fellowships.

The Committee on the Graduate Division has examined this problem extensively over the last few years and has proposed a modification in the residence-fee policy that calls for the equivalent of six quarters of full enrollment, at least half of which must be at Stanford. If course requirements are by then fulfilled, the candidate would go on a reduced tuition of $200 per quarter until the dissertation is completed. Details of this plan are set forth in Appendix 5. We view it as a desirable compromise between the present, unrealistic requirement and the elimination of a fixed residence requirement. We recommend that:

2. The University Ph.D. residence requirement should be modified, as proposed by the Committee on the Graduate Division, to require the equivalent of at least two full years of regular graduate work (at least one year at Stanford) followed by registration at reduced tuition during the dissertation period.

Language Requirement

Present University requirements call for at least a reading knowledge of one foreign language. This sometimes leads to sham: a quickie course, followed as soon as possible by an examination, followed by eclipse. The student gains little, and the department, taking refuge behind the University requirement, assumes little responsibility for language preparation.

Of course this situation does not exist in many departments. Some require extensive command of two or more foreign languages related to the field of study. We believe that departments should not only have the prerogative of setting higher language requirements than the University minimum, but should also have the exclusive responsibility of establishing (or eliminating) language proficiency requirements that are closely related to their students' fields of specialty. This will mean considerable variation between departments, and in many cases variation among individual students within the same department. We recommend that:

3. The University language requirement for the Ph.D. should be dropped, and each department should specify the level of language proficiency appropriate to each individual student's area of concentration.[3]

Students' Needs

In planning and conducting graduate programs it is altogether too easy to concentrate on subject matter and process and to assume that the graduate student is a well-motivated, independent scholar with a well-defined goal. Few would deny that this assumption is false, but there is little concern with the traumas that confront individual students. Uncertainty about vocational aims and life style, the difficulty of matching preferences and aptitudes with a discipline, and such personal concerns as Selective Service and family problems must contribute to the attrition rate. The fact is that we know so little about the comings and goings of graduate students that we cannot even develop accurate institutional-level statistics.

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[3] Appendix 10, p. 121, describes a similar proposal recently transmitted to the Academic Senate by the Committee on the Graduate Division and adopted by the Senate on January 30, 1969.

First and most important we need better methods for dealing with individual problems of graduate Ph.D. students. These are usually dealt with at the department level, but if there is a failure at that point, the student is virtually helpless. We conclude that the Dean of the Graduate Division should increase his staff as necessary to provide a visible and effective mechanism for dealing with student problems that cannot be or are not dealt with adequately in the departments. He should also strive to develop accurate information on present and former graduate students so that a proper assessment of their problems can be made.[4] In summary we recommend that:

4. The office of the Dean of the Graduate Division should take responsibility for the following functions as they apply to Ph.D. students:

a. Act, when needed, as ombudsman for graduate students.

b. Serve as adviser to individual graduate students when needed.

c. Develop and maintain an accurate, up-to-date file on current graduate students in order to obtain accurate survival figures.

d. Ensure that graduate students who leave the University, either temporarily or permanently, without receiving the degree for which they were enrolled, are interviewed to seek to determine their reasons for leaving. If this interview is not conducted by the department, it should take place in the Dean's office. To promote c. above, a summary of the interview should be made and filed in the Dean's office.

e. Gather information on the present activities of former graduate stu-

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[4] As recommended in a paper on graduate admissions and awards, submitted by the topic committee on Admissions and Financial Aid (Appendix 6 in this volume), it is important that departmental operating policies be explicitly defined and well publicized, for the benefit of both current and potential students.

dents including both those who did and those who did not complete the Ph.D. programs for which they enrolled.

f. In cooperation with the schools and departments and the Graduate Students Association, make every effort to provide entering and enrolled students with detailed information on courses and programs, and departmental policies on admissions and awards.

Departmental Programs

The recommendations to be presented here cannot be applied universally to all Ph.D. candidates but rather must be interpreted by individual departments in the light of their programs and disciplines. We urge that these general policies be endorsed by the Academic Senate and that the Senate in turn urge all Ph.D.-granting departments to consider them as guidelines against which the departments should assess their own programs.

Teaching Experience

The place of developing future teachers in Ph.D. programs we leave to the major study we have proposed and to an assessment of departmental goals for graduate education. We are convinced, however, that many graduate students could profit from some experience as apprentice teachers *if* their work is closely supervised, *if* they are given responsibilities commensurate with their skill and interests, *if* they encounter a variety of teaching situations, and *if* they do some advising in conjunction with the teaching experience. This topic will be treated further in our report, *Teaching, Research, and the Faculty* (No. VIII); here we recommend that:

5. The teaching experience of graduate students should be a closely supervised and evaluated learning experience from which both the graduate student teacher and his students profit. Apprentice teaching should extend beyond leading discussion sections to include other valuable experiences such as preparing and delivering lectures, conducting a tutorial, and participating on a panel.

6. The University should provide and operate video-tape equipment for use of any University graduate student teacher who wishes to employ it to improve his teaching performance.

Departmental Expectations

The extent to which students will be able to achieve their academic goals depends not only upon the framework of departmental expectations and requirements within which they must operate, but also upon their awareness and understanding of this framework. Departments should ensure that all students are given detailed and accurate information about departmental expectations for and assessments of their performance. We urge departments to involve students in research work as early as possible in order that departmental assessments of a student's viability as a Ph.D. candidate may be based at least in part upon his demonstrated research skill, and that these assessments may be made at an early date in the student's career. We recommend that:

7. A student should be informed as soon as possible of his viability as a Ph.D. candidate in his department. Departments should state at what point these decisions will be made; in all cases, they should be made within two years from the time of departmental enrollment and should be based on research as well as course and examination performance. Departmental acceptance after this evaluation should carry with it a strong commitment to aid the student in every way in the completion of the Ph.D. This and other performance hurdles in a graduate student's career should be defined explicitly by departments in terms of expected preparation, evaluation criteria, and results attending success and failure.

The Calendar & Scheduling

Our Report II, *Undergraduate Education*, set forth in detail our recommendations on schedule, degree credit requirements, grades and related topics. Although these matters were discussed in the context of undergraduate work, most of the recommendations apply as well at the graduate level. They will not be repeated here in detail, and the reader is referred to the earlier report. This discussion is limited to the opportunities provided by the calendar recommendations in Report II.

The semester system, with a reading period at the end of each term, seems well suited to conventional courses in the graduate curriculum. Where a greater degree of flexibility is desirable, however, graduate courses need not fit into a standard academic calendar, especially where enrollments are small and schedules can be made in consultation with participating students. They should extend over whatever length of time is deemed desirable, meet as frequently or infrequently as the work demands, and start and stop at any point in the academic year. The work in each course should be tailored to individual needs, with required tasks adapted to the goal of each student's graduate program (preparation and presentation of a lecture, writing a paper, performing an experiment, doing a field project, etc.). The start of each semester should simply be a convenient time for conducting such transactions as enrollment, arranging fellowships and stipends, reviewing progress, and plotting out schedules. Such an arrangement will create some havoc with present reporting and record-keeping, but we would argue that graduate progress cannot be certified by transcript. It must instead be monitored by schools and departments on an individual basis. We therefore recommend that:

8. Instructors should be encouraged to specify the duration and meeting schedule of courses to best suit the course topic and material; beyond a uniform school-wide starting date, graduate courses should be freed of strict calendar restrictions.

Professional Socialization

Learning to be a professional involves more than the development of academic competences. We stressed earlier that graduate students should be provided with opportunities to develop the professional roles that best fulfill their individual goals. Some of the opportunities we feel to be necessary, such as variable course assignments and a variety of teaching experiences, have already been mentioned. The other side of the opportunity coin–that of providing sufficient information to avoid obvious mistakes–is treated below.

Through the office of the Dean of the Graduate Division, the University should provide reasonable support for the proposed orientation program of the Graduate Student Association. This office should also consider alternative proposals for providing useful information to applicants about departmental programs at the graduate level. *Courses and Degrees* is clearly inadequate for this purpose. The Alumni Office is currently discussing the feasibility of enlisting recent graduate alumni as information sources for applicants in the same discipline. If this proves unworkable, another means might be to ask departmental graduate student associations to mail to all applicants descriptions of the courses and the program. By whatever method seems best, we urge that the Dean of the Graduate Division and the Graduate

Student Association work together to provide applicants with adequate, relevant, and current information about departmental programs. We recommend that:

9. All departments should prepare extended descriptions of graduate programs for distribution to prospective students and should develop orientation programs for new students. The office of the Dean of the Graduate Division and the Graduate Student Association should cooperate to assist and encourage departments in these activities.

We applaud the goals and programs being promoted by the Graduate Student Association, and we endorse their objective of organizing department-level associations throughout the University. Through such associations, and through graduate student membership on appropriate departmental committees, we hope that graduate students will be able to communicate more effectively their ideas, their problems, and their plans.

Departments are urged to take all possible steps to facilitate interaction between their students and faculty at all levels. Among other things, a central *place* is. called for, whether it be library, lounge, or a large cupboard with a coffee pot, where informal gatherings may take place. Various types of seminars should be held at which general problems of the discipline, the academic area of which the discipline is a part, and of the University as a whole may be discussed. Projects involving a number of students from the same or related departments should be encouraged.

We have recommended in our Report III, *University Residences & Campus Life*, that new facilities be provided for the housing and social activities of graduate students. The reader is referred to that report. We recommend that:

10. All departments should seek to provide facilities and mechanisms that will encourage interchange among graduate students and between students and faculty.

11. In consultation with the Graduate Students Association and other interested groups or individuals, the University should plan facilities for a University-wide graduate student center.

Admissions & Related Areas

In the recruitment, assessment, and selection of graduate students, many of the problems faced by departments and schools are more or less individual to their respective units. Other problems, however, stem from characteristics of the broader University or societal context and, although currently dealt with independently by the individual units, are felt by all and are perhaps more appropriately aired and resolved at the University level. Problems of this nature would include: 1) increasing minority-group enrollment at the graduate level; 2) the special problems of women's education; 3) meeting the special needs of admitted foreign students; 4) assessing the credentials of students from little-known foreign or American schools; and 5) waiving admission or program requirements that are seen to interfere with achieving specific goals.

Only on the first of these matters—minority enrollment—do we have sufficient confidence to make a firm recommendation, and this appears below. The others we commend to the attention of the proposed new study. We also include with this report some background information that may prove useful. On the subject of women's education we call attention to the comprehensive paper prepared for our study by Professor Alberta E. Siegel, which appears as Appendix 7. This statement will prove valuable in considering many of the problems of the role of women in higher education, both at the graduate and the undergraduate level. We include it with this report for two reasons; first, the paper discusses the relationship of career choices to the problem of women's education, and second, it raises cogent questions about the resumption of education in mid-career that have broad implications for graduate education in general. Professor Siegel's paper, which is also to be issued as a separate SES document, deserves earnest consideration throughout the educational world. We commend it specially to the attention of the Commission on Graduate Education whose creation we propose in this report and urge that the specific recommendations she sets forth be considered by this and other University bodies.

The special needs of foreign students are discussed in a memorandum from the Associate Dean of the Graduate Division for International Students, Kenneth J. Cooper, included as Appendix 8. The special problems of admitting students from little-known institutions are dealt with in the earlier referenced report of the topic committee on Admissions and Financial Aid, included here as Appendix 6. The need for special graduate admission practices for students with goals and needs that do not fit the conventional pattern is discussed below as a topic deserving the explicit attention of the proposed study commission.

Minority Students

Several schools have adopted vigorous programs of recruiting minority-group students, and, within Humanities and Sciences, many departments are making similar efforts. It seems clear to us that coordinated efforts are required, and we therefore recommend that:

12. Those schools that do not currently have recruitment programs aimed at increasing minority-group representation in the graduate student body should be urged to develop and implement such programs. These programs should be coordinated through a member of the Provost's staff.

Within Humanities and Sciences it might be advisable to develop several programs for the different areas of study (e.g., sciences, social sciences, humanities, fine arts). Persons involved in other programs within the University should be valuable resources, as would currently enrolled minority-group students.

Graduate Division Special Programs

These programs currently serve as a resting-place for students whose academic goals cannot be met adequately within existing departmental programs. Any Stanford graduate student in good standing in his department can apply for admission to Graduate Special Programs. Despite the fact that a detailed description of the application procedure can be found in *Courses and Degrees*, the existence of this program is not widely known. Later in this report we discuss some special needs of graduate students that are not being met, and we propose for the consideration of a Commission an amalgamation and extension of the functions of the Graduate Division Special Programs and another relatively small operation, the University Division. As an interim measure, however, we think that the University community should be made more aware of the existence of these options to normal departmental affiliation. We recommend:

13. The Dean of the Graduate Division should publicize, through all appropriate channels, the existence of the Graduate Division Special Programs and the University Division. As many University students, faculty, and academic officers as possible should know why these programs exist, what they accomplish, and how to institute application procedures.

Some Agenda Items for the Proposed Study

The broad scope of the proposed new study by a University-wide Commission on Graduate Education is set forth in our Recommendation 1. Here we summarize and convey to the Commission some of the suggestions that have been submitted to us, or that arose within the Steering Committee and its staff, that appear sufficiently valuable as to merit further study. We have been unable to analyze them in enough depth to agree on them as recommendations and pass them along as unfinished business. Some specific recommendations in these and other areas can be found in a statement submitted by the Chairman of the Graduate Students Association, included as Appendix 9 to this report.

An Intermediate Degree

As we noted earlier, the national phenomenon of attrition in Ph.D. programs is a serious, and poorly understood, problem at Stanford. Our questionnaire to Ph.D.-granting departments proposed several possible ways of reducing the problem, none of which met with any significant degree of support. An intermediate degree stressing preparation for teaching careers, perhaps modeled after Yale's M. Phil., was resoundingly rejected, as was maintaining a single Ph.D. but providing alternative "tracks" directed towards different career goals. The vast majority of departments responding to these questions argue that the research training resulting from departmental course and dissertation requirements is essential for those students who plan teaching careers; further, that participation in research while engaged in teaching is a necessary but not sufficient condition for competent teaching. Recognition of the teaching function should come through increasing opportunities for "apprentice" teaching without decreasing those mechanisms that support the research function.

Given these departmental attitudes we abandoned further consideration of an intermediate *degree*, as such. Yet we believe there may be merit in giving some recognition to those who complete all of the steps toward the Ph.D. except the dissertation. Many students, as a matter of financial necessity, leave the campus to take up full-time careers in teaching, or other work related to their graduate training, hoping to complete their dissertations in their spare time. We think there is merit in recognizing the level of accomplishment reached, both to help such students in their job hunting and to provide encouragement and incentive to completing their dissertations. We therefore propose consideration of the following suggestion for formalizing the somewhat facetiously termed "ABD" (All But Dissertation) degree:

1. Students who leave the University after completing all departmental and University requirements for the Ph.D. degree except that of the dissertation should automatically receive a Candidate's Certificate in their field, testifying to their accomplishments.

University Special Programs

For a large variety of reasons, the current structure of graduate education at Stanford and elsewhere fails to accommodate certain segments of the population whose needs or interests are different from those of most graduate students. Among these groups, the following can often be found:

1. Married women whose family responsibilities interrupted completion of their graduate training. Many graduate departments currently have age limitations and/or part-time enrollment restrictions that effectively exclude these women from our student population.

2. People who have had some college level work or completed an Associates Degree at a junior college, but who never received B.A. or B.S. degrees, and whose work experience has prompted them to seek related professional degrees at the master's level. The School of Engineering is currently recruiting minority-group students in this category. The few individuals recruited so far show high potential and motivation; they come not only with valuable work experience, but also with tuition paid by their employers (for whom they will continue to work on a part-time basis).

3. People with undergraduate degrees in areas completely unrelated to those in which they wish to do graduate work.

4. People whose interests at the graduate level cannot be met within the program of any single department, but could be met through an interdepartmental program.

5. Currently enrolled graduate students who wish to change departments but have not completed a sufficient number of courses in the new department to be considered for admission.

Certain of the above needs can currently be met through two little-known programs: the University Division and the Graduate Division Special Programs. We see merit, however, in replacing the two existing programs with a single new one, University Special Programs. The principal function of such a program would be to develop, supervise, and evaluate programs specifically designed to meet the cited special needs in the graduate student population. It should be as free as possible of universal formal requirements, age restrictions, and rigid criteria. The goal of providing opportunities for those with special problems and talents should be more important than making no mistakes. We suggest careful consideration of a plan such as the following:

> 2. A new University-wide graduate program should be established, University Special Programs, replacing the current University Division and Graduate Special Programs. The primary function of University Special Programs should be to explore and initiate ways of accommodating talented graduate students whose educational goals and/or history preclude routine accommodation.

Grades & Credit

Our Report II, *Undergraduate Education*, recommended a number of changes in what we termed "academic bookkeeping." The proposed change to a semester calendar lends itself easily to graduate programs, and we have already recommended changes compatible with this schedule. Other proposals in this area adapt well to graduate work. But our recommendations on grading and credit, which were intended to apply to the undergraduate level, raise questions in the graduate area that merit review.

Grading patterns vary widely among graduate programs, and there is a general reluctance to modify them on the ground that "everyone understands what they mean." But the fact that a "D" grade is passing (if not respectable) in some programs, while a "B–" is akin to a failing grade in another, is both irrational and counterproductive. Such variations inhibit students from crossing departmental lines in their graduate work for fear that their faculty judges really do not understand what grades in other areas mean. Something closer to standardization may be in order, and schools and departments should consider moving toward the "A" (exceptional)–"B" (superior)–"C" (satisfactory) scale proposed for undergraduates.

We here assume that some form of grading is necessary at the graduate level and that grades can be an effective feedback mechanism; both of these assumptions should be closely examined by the proposed Commission.

Our earlier report recommended elimination of the credit system in favor of a simple "course" plan. If units of credit are an inappropriate coinage for measuring undergraduate work, the argument would seem to apply even more forcefully at the graduate level. These matters should be carefully studied, and we put forward the following proposal for consideration:

3. Graduate programs should adopt the simplified A-B-C grade system, and the "course" as a unit for measurement of progress.

Course Work

Departments differ widely in the amount of formal course work required for the Ph.D. We do not wish to intrude upon the various disciplines' privilege of specifying knowledge requirements, but we do wish to raise questions about two common elements of doctoral programs: the assessment of knowledge possessed and the place of research in the graduate sequence. On the first of these matters we urge consideration of providing students with the option of completing formal courses or demonstrating mastery through examination.

On the matter of sequence, we believe there is merit in introducing the students to research work as early as possible in the graduate years. The all-too-common pattern of course work followed by examinations followed by research merely serves to delay immersion into a vital part of the work of professionals in the discipline. It can be a disservice to students who discover too late that they are really not suited to research in the field. If they were provided with a taste of research early, either by limiting formal course work or interspersing it with research, these students might make the discovery early and alter their plans before squandering vast amounts of personal energy and institutional resources. Two years of course work seems to us to be a reasonable maximum limit, to be reduced or combined with research whenever possible. We present the following proposal for further study.

4. Subject matter requirements should be limited to the minimum consistent with a student's needs, and students should have the option of completing such requirements either by completing courses or departmental examinations. Research work should begin early either by limiting other required work or interspersing course work with research experience.

Apprentice Teaching

One of the important purposes of the proposed study of graduate education is the clarification of the departments' goals vis-a-vis the development of teachers in Ph.D. programs. Those departments that do not intend to stress preparation for teaching should say so. Those that do (and we assume that most departments fall in this category) should consider ways of improving the process through systematic apprenticeships in teaching and in related functions such as advising. As an expansion of the ideas presented as Recommendation 5 in this report, we submit the following proposal for careful study:

5. Departments should be encouraged to provide opportunities for experience in teaching as a regular part of graduate training, for all students planning a teaching or teaching and research career. Graduate students who are given full or major responsibility for teaching an undergraduate course should be designated as "Teaching Fellows." An appointment as a Teaching Fellow should be a recognition of above-average teaching ability and should be accompanied by a salary greater than that given to regular Teaching Assistants in the same department.

In conjunction with the teaching experience, graduate students should be involved in advising the students they teach. Advising of undergraduate majors, especially those planning to do graduate work in the same field, would also be potentially valuable both for the graduate student and the undergraduates.

Summary of Recommendations

1. The President, in consultation with the Academic Senate and the Graduate Students Association, should appoint a Commission on Graduate Education charged with conducting a study of Stanford's problems in graduate education, with especial emphasis on Ph.D. programs. Its work should begin with a determination of the various departments' specific policies, goals, and problems in graduate training and should seek to obtain student and faculty views on the adequacy of existing programs.

2. The University Ph.D. residence requirement should be modified, as proposed by the Committee on the graduate Division, to require the equivalent of at least two full years of regular graduate work (at least one year at Stanford) followed by registration at reduced tuition during the dissertation period.

3. The University language requirement for the Ph.D. should be dropped, and each department should specify the level of language proficiency appropriate to each individual student's area of concentration.*

4. The office of the Dean of the Graduate Division should take responsibility for the following functions as they apply to Ph.D. students:

a. Act, when needed, as ombudsman for graduate students.

***Appendix 10, p. 121, describes a similar proposal recently transmitted to the Academic Senate by the Committee on the Graduate Division and adopted by the Senate on January 30, 1969.**

b. Serve as adviser to individual graduate students when needed.

c. Develop and maintain an accurate, up-to-date file on current graduate students in order to obtain accurate survival figures.

d. Ensure that graduate students who leave the University, either temporarily or permanently, without receiving the degree for which they were enrolled, are interviewed to seek to determine their reasons for leaving. If this interview is not conducted by the department, it should take place in the Dean's office. To promote c. above, a summary of the interview should be made and filed in the Dean's office.

e. Gather information on the present activities of former graduate students including both those who did and those who did not complete the Ph.D. programs for which they enrolled.

f. In cooperation with the schools and departments and the Graduate Students Association, make every effort to provide entering and enrolled students with detailed information on courses and programs, and departmental policies on admissions and awards.

5. The teaching experience of graduate students should be a closely supervised and evaluated learning experience from which both the graduate student teacher and his students profit. Apprentice teaching should extend beyond leading discussion sections to include other valuable experiences such as preparing and delivering lectures, conducting a tutorial, and participating on a panel.

6. The University should provide and operate video-tape equipment for use of any University graduate student teacher who wishes to employ it to improve his teaching performance.

7. A student should be informed as soon as possible of his viability as a Ph.D. candidate in his department. Departments should state at what point these decisions will be made; in all cases, they should be made within two years from the time of departmental enrollment and should be based on research as well as course and examination performance. Departmental acceptance after this evaluation should carry with it a strong commitment to aid the student in every way in the completion of the Ph.D. This and other performance hurdles in a graduate student's career should be defined explicitly by departments in terms of expected preparation, evaluation criteria, and results attending success and failure.

8. Instructors should be encouraged to specify the duration and meeting schedule of courses to best suit the course topic and material; beyond a

uniform school-wide starting date, graduate courses should be freed of strict calendar restrictions.

9. All departments should prepare extended descriptions of graduate programs for distribution to prospective students and should develop orientation programs for new students. The office of the Dean of the Graduate Division and the Graduate Student Association should cooperate to assist and encourage departments in these activities.

10. All departments should seek to provide facilities and mechanisms that will encourage interchange among graduate students and between students and faculty.

11. In consultation with the Graduate Students Association and other interested groups or individuals, the University should plan facilities for a University-wide graduate student center.

12. Those schools that do not currently have recruitment programs aimed at increasing minority-group representation in the graduate student body should be urged to develop and implement such programs. These programs should be coordinated through a member of the Provost's staff.

13. The Dean of the Graduate Division should publicize, through all appropriate channels, the existence of the Graduate Division Special Programs and the University Division. As many University students, faculty, and academic officers as possible should know why these programs exist, what they accomplish, and how to institute application procedures.

Appendix 1 Written Information from Ph.D. Departments

A. Memo of Inquiry

To: Chairman of Ph.D. Granting Departments & Deans of Schools
From: Herbert L. Packer, Chairman, Steering Committee

The Steering Committee of the Study of Education at Stanford has begun to address itself to problems of graduate education at Stanford. Although we are concerned with matters affecting graduate study and the graduate student body as a whole, our deliberations on strictly academic matters have been confined to the problems of graduate work in those fields which offer the Ph.D. degree. The subject of this memorandum, therefore, is confined to those doctoral programs (and related master's programs) and excludes professional programs leading to such degrees as the M.D., L.L.B., M.B.A., and Ed.D., as well as programs leading to terminal master's degrees.

Identification of problems in graduate education is hampered by the fact that there really is no one program, but rather a large number of departmental programs loosely held together by a few broad University regulations. Although we have perceived a certain amount of dissatisfaction with graduate programs among both students and faculty, we find that there is extreme variation among departments as to the nature and degree of problems faced and their possible solutions. Many departments, however, seem to be confronted with uncertainty in two major areas: the role of preparation for careers in teaching as part of the graduate program, and the structure of graduate requirements. Concerns over these matters appear to be most acute in the humanities and social sciences, and thus the questions raised here are perhaps most relevant to departments in these fields.

The purpose of this memorandum is to set forth some of the tentative views of the Steering Committee on a number of matters affecting graduate education and to seek departmental and school reaction as to their validity and applicability. The Steering Committee is fully aware that these suggestions have more relevance to some disciplines than to others. Our tentative conclusions are set forth in general terms in the expectation that responses will differ widely. The differences themselves will help to shape the final recommendations of the Study of Education at Stanford.

The Teaching Function

The Steering Committee has taken note of the fact that although many of our Ph.D.'s, and a majority of those in the humanities and social sciences, will find careers in college and university faculties, the importance of the teaching function in graduate preparation is almost totally overshadowed by emphasis on research. We have noted the numerous efforts to establish a degree comparable to the Ph.D. which avoids the dominant research-dissertation emphasis. Such degrees as the M.Phil. (at Yale) and Doctor-of-Arts (proposed at Berkeley) are representative.

We have rejected the notion of recommending the general adoption of such a degree at Stanford, believing that the Ph.D. is so entrenched in the American system that any such alternate will be looked upon as a second-class degree. Instead, the Ph.D. degree itself might be modified both in terms of University specifications and departmental programs so as to allow greater variation in the path to its achievement. The dissertation could take a number of forms, some closely tied to research, others more allied to preparation for teaching. This concept would view a creative interpretation or synthesis of existing material as representing as valid a preparation for an *academic* career as other forms of research or scholarship.

The Committee feels that, since most of our Ph.D.'s will enter careers which require some active teaching, some work in teaching normally should be recommended for all graduate students. It is our tentative conclusion that all (or nearly all) graduate students should have some experience in supervised teaching, not just as employment but as an integral part of the graduate program.

Course Structure

The Committee has reached the tentative conclusion that many of our Ph.D. programs are too rigid in their structure and require an unreasonable amount of formal course work. Such requirements seem out of harmony with the intended scholarly nature of graduate work. Instead of the two years of course work now required in many programs, we believe that graduate students should be given the option of acting on their own responsibility in acquiring the capacities and knowledge requisite to their professional careers. These required capabilities might well be defined by the faculty in terms of course work but be measured through performance in proficiency examinations. Thus the student would have a choice of routes to completion of his formal work, freed of the arbitrary constraints of specified, required courses.

We feel that the graduate course structure should be entirely free of the restrictions of the quarterly calendar, units, and the usual examination-term paper schedule. Courses should be offered to help students acquire what they need and not to serve as successive hurdles down the path to a graduate degree. Being freed of ordinary schedule restrictions, courses could be scheduled over whatever period is deemed best, be it two weeks or an entire year. Such flexibility would permit the utilization of visiting scholars to lecture in specialty areas, thereby avoiding the necessity to "cover" every one of the many sub-specialties by a faculty appointment, or, alternatively, of leaving gaps in the offerings. In many cases, students could attend lectures at another institution, under negotiated arrangements, to take advantage of specialties insufficiently popular to merit the importation of visitors.

If the conventional course and the unit of credit are to be abandoned as principal steps toward a graduate degree, some very solid alternatives will have to be created. One change would have to be an increased stress on an important element of many present programs–a close and continuing tutorial arrangement between each student and one or more faculty members. The responsibility for monitoring progress of the graduate student would thus be shifted from the Registrar to the department faculty.

Such an arrangement would obviate the need for the present unduly restrictive nine-quarter residence requirement. Some students might complete their graduate education in less than three years; others might need much more than three full-time years. The present grading system, which has largely lost its meaning in the "A-B curve," would be replaced by comprehensive examinations and faculty evaluations.

Selection of Graduate Students

The Committee has given some thought to matters affecting the selection of the graduate student body. Although many departments now receive many applications for each place in the class, the ratio varies considerably. It seems inconsistent for Stanford to devote large amounts of time and energy to the recruitment of undergraduate students, but almost none to the recruitment of graduates. The University might well send representatives to undergraduate colleges to screen and inform potential graduate applicants. The nuisance of dealing with increased numbers of applications should be offset by an improvement in quality of graduate students, and a reduction in the number of students who enroll here in ignorance of what their chosen department really has to offer.

The policy of many Stanford departments of prohibiting or discouraging Stanford undergraduates from enrolling in their graduate programs might be called into partial question. Undoubtedly there is value in having students benefit from the viewpoints of two different institutions in the course of their education. On the other hand, this policy stands in the way of one desirable objective–the diminution of the presently existing barrier between undergraduate and graduate work. Many students are capable of making this shift over the last year or more of their undergraduate enrollment rather than abruptly after graduation. We would propose that departments which do not usually admit Stanford undergraduates as regular graduate students permit the admission of highly qualified Stanford undergraduates for work through the master's degree or its equivalent. Such students could then go on to other graduate schools to complete their doctoral work, having made a gradual transition to graduate study.

Some Questions

Arising from the above discussion are a number of questions which the Steering Committee would like to put to each school and department granting the Ph.D. We recognize that not all of these questions are relevant to every area, but would appreciate your responses to those which apply in your case:

1. Should the route to the Ph.D. be broadened so as to permit award of the degree to students whose primary interest is a teaching rather than a research career? Or would you prefer the establishment of a teaching degree such as the M.Phil.? On the other hand, do you find the present program and degree structure satisfactory?

2. Should dissertation specifications be amended so as to permit an alternative to the present research emphasis?

3. Should Ph.D. candidates be required to do some intensive supervised teaching as a regular part of their graduate programs?

4. Should the graduate course structure and calendar be more flexible than at present?

5. Should faculty evaluation and judgment, more thorough comprehensive examinations, and the accomplishment of certain specified tasks or projects, replace courses and units as a principal measure of progress to the Ph.D.?

6. Do you favor a plan under which each graduate student is attached to a faculty tutor and the tutor assumes major responsibility for guiding and evaluating the student's progress?

7. Should the present nine-quarter residence requirement be dropped?

8. Should course letter grades be dropped as a measure of graduate student performance, to be replaced by evaluative statements that would become part of the student's record?

9. Should a more refined system of evaluating performance in comprehensive written and oral examinations be introduced to replace the present simple pass-fail structure?

10. Do you favor more active recruiting of graduate students?

11. Should Stanford undergraduates be eligible for admission to your graduate department for full Ph.D. study? For a shorter period of graduate study preliminary to Ph.D. work elsewhere?

12. What other major problems (excluding budgetary problems) confront your graduate programs and what solutions do you recommend?

Answers to the above questions from all Ph.D. departments and schools will have important influence on the recommendations we have been asked to develop. We are anxious to receive your own views, or the collective views of your faculty (complete with dissenting views where appropriate) by March 15. Additional copies of this memorandum are available from the SES office (phone 4567) in case you would like them for distribution among your faculty.

In closing let me reiterate that we are well aware of the differing needs of various departments and disciplines. Your responses will help us to avoid bland exhortation and permit us to develop proposals which will have relevance to the many and diverse Ph.D. programs at Stanford.

February 26, 1968

Appendix 1 **B. Summary of Responses**

Following is a list of schools and departments that were sent the questionnaire on Ph.D. programs. The different kinds of responses are coded with superscripts as follows:

^{1} = the department head or Dean expresses his own viewpoint; ^{2} = a consensus was reached by the departmental faculty; ^{3} = unclear whether consensus or writer's views; * = no response received.

^{2}Business

Earth Sciences
- ^{2}Geology
- ^{2}Geophysics
- *Mineral Engineering
- ^{1}Petroleum Engineering

^{1}Education

^{1}Engineering
- ^{1}Engineering Mechanics
- ^{1}Aeronautics and Astronautics
- ^{1}Chemical
- ^{1}Civil
- ^{1}Electrical
- ^{2}Industrial
- ^{1}Materials Science
- ^{1}Mechanical
- *Operations Research
- ^{3}Engineering-Economic Systems

^{1}Food Research Institute

Humanities and Sciences

Fine Arts
- ^{2}Art and Architecture
- ^{3}Music
- ^{1}Speech and Drama

Humanities
- ^{1}Classics
- ^{1}English
- ^{1}Humanities Special Programs
- ^{1}History (two statements received)
- *Philosophy
- ^{1}Linguistics

Social Sciences
- ^{2}Anthropology
- ^{2}Communications
- ^{1}Economics
- ^{1}Political Science
- ^{2}Psychology
- *Sociology

Natural Sciences
- ^{2}Applied Physics
- ^{1}Biological Science
- ^{2}Chemistry
- ^{2}Math
- ^{2}Physics
- *Statistics
- ^{1}Computer

Foreign Languages
- ^{2}Asian
- ^{2}French and Italian
- *German
- ^{3}Spanish and Portuguese
- *Slavic

1. Should the route to the Ph.D. be broadened so as to permit award of the degree to students whose primary interest is a teaching rather than a research career? Or would you prefer the establishment of a teaching degree such as the M.Phil.? On the other hand, do you find the present program and degree structure satisfactory?

Summary of Question 1

	Yes	*No*	*No response*
Broaden Ph. D.	15	13	11
Establish M. Phil.	5	18	16
Satisfactory at present	14	0	25

Business. No, there are adequate possibilities within the present structure. A teaching-oriented degree would be viewed as cheap.

Earth Sciences. All three respondents answered "no." All felt that the present procedure was flexible enough and that any reduction in course work would cause a Stanford Ph.D. to be viewed as a second-class degree.

Education. Broadening the route to the Ph.D. is desirable to suit individual needs, but a course of study which does not prepare a student to conduct research is hazardous. Ideally, a Ph.D. program should prepare students to teach and conduct research.

Engineering. The general consensus was that the present structure is flexible enough to meet individual needs; all stressed that teaching and research must go hand-in-hand and that research training and experience is essential.

Food Research Institute. Present structure satisfactory.

Humanities and Sciences:

Fine Arts. Art and Architecture have no use for a teaching degree, Music stresses that both teaching and research are integral to their degree program, and Speech and Drama feels that teaching should be emphasized but an M.Phil. should not be established.

Humanities. All but Humanities Special Programs, which favored the establishment of a Doctor of Arts alternative, felt that a teaching degree would be viewed as a second-class degree and stressed that present standard of proven research ability should be maintained for the Ph.D.

Social Sciences. All four respondents opposed establishing the M.Phil.; two felt that teaching experience should be a specific requirement for the Ph.D., and one felt that it should be a purely scholarly enterprise.

Natural Sciences. Most stated that the present structure is satisfactory and that a M.Phil. would be inappropriate. Only Biology favored broadening the route to the Ph.D. to encompass those whose primary interest is in teaching.

Foreign Languages. Asian Languages reported divided opinion, French and Italian did not favor broadening the route to the Ph.D., but did favor the establishment of the M.Phil.; Spanish and Portuguese simply responded "yes."

2. Should dissertation specifications be amended so as to permit an alternative to the present research emphasis?

Summary of Question 2

Yes	*No*	*Adequate flexibility at present*	*No response*
8	24	6	1

Business. No, it should not be amended so as to permit a special teaching-oriented alternative; nevertheless, would allow dissertation to be directed toward an issue relevant to the teaching of business.

Earth Sciences. No, independent investigation and original thinking are crucial.

Education. Should amend dissertation specifications for students in programs emphasizing teaching.

Engineering. Electrical and Industrial felt that their programs are extremely flexible; all stressed that research is essential and that a thesis should make an original contribution to knowledge.

Food Research Institute. No.

Humanities and Sciences:

Fine Arts. No, dissertations are research projects, not teaching exercises.

Humanities. Classics would increase rather than decrease the research emphasis; English would accept a set of related essays; Humanities favors amending; Linguistics and History oppose the idea.

Social Sciences. Two departments expressed no opinion; three stressed that proven research capability is essential.

Natural Sciences. One department opposed the idea; several would accept alternatives such as creative synthesis or interpretation of existing materials or major design efforts; and one favored setting more reasonable goals.

Foreign Languages. Two departments said "no" and one said "yes," all without comment.

3. Should Ph.D. candidates be required to do some intensive supervised teaching as a regular part of their graduate program?

Summary of Question 3

Requirement		*For future teachers only*	*No response*
Yes	*No*		
25	8	3	3

Business. "Yes, but we would emphasize the word supervised, as the typical use of graduate teaching assistants does not automatically produce the right kind of experience."

Earth Sciences. Two of the three departments answered "no," mentioning that not all students have the aptitude and that foreign students are at a disadvantage. The other department answered "yes."

Education. Yes.

Engineering. Two of the eight departments answered "no." Four said that it could be done on an informal basis for those planning to teach, but that it should not be a requirement for all. Two responded affirmatively.

Food Research Institute. No.

Humanities and Sciences. There was a universal affirmative response from all departments. One mentioned that intensive supervision would be a problem. Classics said that it should be done without damage to undergraduates, without pay, and with teaching performance judged and graded. Humanities Special Programs felt that teaching should be a requirement for a Doctor of Arts Degree but not for the Ph.D. degree. The Physics Department said that it should be urged but not universally required.

4. Should the graduate course structure and calendar be more flexible than at present?

Summary of Question 4

Yes	*No*	*Flexible at present*	*No response*
15	6	13	5

Business. "A flexible graduate course structure is desirable and is being implemented in the GSB."

Earth Sciences. Opinion was divided in the three departments responding. One answered "yes," one answered "no," and the other stated that the present system works.

Education. "Yes, but no one department should be able to devise such an idiosyncratic calendar that it is literally out of phase with the rest of the University."

Engineering. One department responded positively and one felt that course requirements were flexible now. The seven negative responses were for the following reasons: more flexibility would reduce level of present standards; the large number of students requires organization; neither complete flexibility nor rigidity is desirable; any change would seriously interfere with a Master's Degree program which is terminal for 80 percent of the students. One stated that to provide flexibility of student programs, the graduate course structure and calendar must be maintained.

Humanities and Sciences:

Fine Arts. Art and Architecture feels that schedules already are quite flexible; the other two departments answered affirmatively.

Humanities. Four of the five respondents answered "yes" and the other department said that the present structure is flexible.

Social Sciences. Two of the four responses were affirmative. One negative response indicated that it would be too easy to lose control of standards. The last respondent wanted flexibility further defined.

Natural Sciences. Opinion was divided. One answered that there were strong opinions both ways within their department. One stated that the present situation was satisfactory. One said "yes" to the curriculum part and "no" to the calendar part. The final respondent answered affirmatively, especially for exceptional students.

Foreign Languages. Two of the three respondents said "yes" and the other said the present structure could be more flexible if they had more staff.

5. Should faculty evaluation and judgment, more thorough comprehensive examination, and the accomplishment of certain specified tasks or projects, replace courses and units as a principal measure of progress to the Ph.D.?

Summary of Question 5

Yes	*No (Courses & units satisfactory)*	*Combination used at present*	*No response*
2	12	14	11

Business. "The GSB has moved in the direction of eliminating course requirements and substituting a comprehensive doctoral examination system. They receive evaluations on each Ph.D. student from professors teaching courses each quarter."

Earth Sciences. Opinion was divided. One said that advisers tend to evaluate their students continually.

Education. "Ideally, yes. But it is extraordinarily time-consuming if done properly. Otherwise, it is better to rely on the existing system."

Engineering. The general consensus is that they already have some workable combination of faculty evaluation and judgment with courses and units. All see the role of a thesis adviser as filling the function of faculty evaluation. Several described what they presently do.

Food Research Institute. Yes, as an option of departments.

Humanities and Sciences:

Fine Arts. Two of the three responded affirmatively. The other responded that numerical requirements are meaningless but that organized courses are often the most "intensive and rational means of covering material."

Humanities. The majority answered with a qualified "yes." They see the problems of greater faculty time being needed. All felt that courses and units cannot be the principal measure of progress but can be retained for some aspects of the work. Humanities Special Programs added that the important thing is to interpret courses and units in realistic terms or accomplishments.

Social Science. Two of the respondents felt that there was already little reliance on units in gauging doctoral progress. The other respondent felt that one should move slowly in experimenting, that this be not a way of "evading sound standards of performance."

Natural Sciences. Two responded affirmatively. One felt that it should be a departmental option as they require different amounts of course work from different students depending on their backgrounds. One responded negatively.

Foreign Languages. Opinion was divided.

6. Do you favor a plan under which each graduate student is attached to a faculty tutor and the tutor assumes major responsibility for guiding and evaluating the student's progress?

Summary of Question 6

Yes	*No*	*Adviser functions as tutor*	*No response*
7	15	13	4

Business. "No. Given a faculty with broad and diverse interests, it might be dangerous to attach a student too firmly to one man. Each of our Ph.D. candidates has a faculty adviser throughout this program and the adviser can be changed any time at the option of either the student or the professor."

Earth Sciences. Two of the three respondents answered that the adviser or thesis supervisor functioned this way at present. The other respondent answered "no."

Education. It would depend on the individual student. "Some would thrive with a single tutor, but others might experience mild claustrophobia."

Engineering. All respondents felt that the system of a faculty adviser and thesis supervisor provide all the personal attention a student requires. A tutorial program would just be a change in name.

Food Research Institute. "It might be an advantage."

Humanities and Sciences:

Fine Arts. Two of the three respondents answered "yes." The other respondent wanted to know how a tutorial program would be organized.

Humanities. All answered with a qualified "yes." Some of the qualifications were: the problem of sabbaticals, etc. with a professor not being on campus three years consecutively; that the system be flexible (a student being free to move to another tutor); and that it is safer for student and faculty to have a wider base of judgment for a student's work than one man.

Social Sciences. Four of five responded that the adviser system works similarly to a tutorial program. Psychology is beginning a tutorial program in which the student is expected to have half his load committed to this activity.

Natural Sciences. Two of the four respondents answered "yes" but mentioned the problem of manpower. The other two felt that the adviser system functioned similarly.

Foreign Languages. Two of the three responded negatively, the other positively.

7. Should the present nine-quarter residence requirement be dropped?

Summary of Question 7

Yes	*No*	*No response*
18	13	8

Business. Yes. "It seems to serve only a financial objective rather than contributing to the quality of the program."

Earth Sciences. Two of the three departments responded negatively. The other stated there was no strong opinion either way.

Education. Yes. "Most of our doctoral candidates are post-master's, a six-quarter requirement is adequate."

Engineering. Four of the eight departments answered "no." Three responded that the requirement had no significance or that the present requirement was satisfactory. One said that it shouldn't be a rigid requirement.

Food Research Institute. No.

Humanities and Sciences:

Fine Arts. All responded "yes."

Humanities. Four of the five responded "yes." One did not see anything unreasonable in the present requirement.

Social Sciences. Two of the four answered "yes" and the other two said that there was no problem with the requirement.

Natural Sciences. All four responded positively.

Foreign Languages. One department said "yes" and one "no."

8. Should course letter grades be dropped as a measure of graduate student performance, to be replaced by evaluative statements that would become part of the student's record?

Summary of Question 8

Yes	*No*	*Evaluation & grades*	*No response*
7	17	10	5

Business. The GSB presently permits students to take as many courses for + grades after the first year as they wish; no objections to dropping letter grades if done by the University as a whole.

Earth Sciences. No. Need grades to measure student's performance in competition with others; would only result in voluminous records and more ambiguity.

Engineering. No. Grades are the most convenient, effective, and realistic means to evaluate academic performance, especially in competition with others. Most departments supplement grades with faculty appraisals.

Education. Yes, if the faculty will commit itself to careful evaluation, i.e., more than saying "equivalent to A-level work."

Food Research Institute. No.

Humanities and Sciences:

Fine Arts. Art says "no," Music says "yes," and Speech and Drama says personal appraisals are more important than grades due to the small size of the department.

Humanities. The majority said "no"; evaluative statements are not precise or meaningful enough for comparisons, especially on the national level. Most would welcome a form from the Registrar for comments, which would become a part of the student's permanent record, in addition to grades.

Social Sciences. No, most recommend supplementing grades with evaluative statements.

Natural Sciences. Computer Science has moved to +/– system, Math feels that evaluative statements should replace grades after the first year; all others feel that both grades and evaluations are necessary.

Foreign Languages. Two said that evaluations are made in addition to grades, one reported divided opinion.

9. Should a more refined system of evaluating performance in comprehensive written and oral examinations be introduced to replace the present simple pass-fail structure?

Summary of Question 9

Yes	*No (already refined)*	*No response*
10	25	4

Business. The GSB uses High Pass, Pass, Marginal Pass, and Fail. With accumulated Marginal Passes a student may be asked to leave.

Earth Sciences. Two departments said "no," and the other said that they are working on a new plan.

Education. Exams are used as a diagnostic device and the student is told the examiner's diagnosis.

Engineering. Many mentioned that their present system is very refined, exacting, complicated–if anything, over-structured. Others mentioned many present refinements, even where +/– is used.

Food Research Institute. No.

Humanities and Sciences:

Fine Arts. Two departments said "yes"; Art and Architecture explained that faculty evaluations are made on every exam and made available to the student.

Humanities. All departments attempt to make some evaluations now; most would welcome a more thorough and refined evaluating system; only History felt that this policy should be left to the department.

Social Sciences. Most use Pass with distinction but feel that a lengthier evaluative statement from the examining committee would be useful.

Natural Sciences. All but one, who said it would be a worthy but costly goal because of faculty shortage, said "no."

Foreign Languages. No, but favor Pass with distinction in exceptional cases.

10. Do you favor more active recruiting of graduate students?

Summary of Question 10

Yes	*No* *(Present satisfactory)*	*No response*
27	9	3

Business. The GSB does a certain amount of recruiting and thinks that this is appropriate and could be done by other departments in the University.

Earth Sciences. Opinion was divided.

Education. Definitely yes.

Engineering. Six out of the seven departments answered "yes." The other department felt that recruiting wasn't necessary.

Food Research Institute. Yes.

Humanities and Sciences:

Fine Arts. All responded affirmatively.

Humanities. All responded affirmatively. One mentioned that one could learn about "motivation" and would be able to persuade the best students to come. One felt that careful experimenting should be done and results studied before implementing a recruiting program on a large scale.

Social Sciences. All responded affirmatively. One mentioned the need for recruiting minority students.

Natural Sciences. Three of the five departments responded affirmatively. One felt that they were doing very well at present, and one said "no."

Foreign Languages. Two of the three answered "yes." One responded "no, not until there are more scholarships."

11. Should Stanford undergraduates be eligible for admission to your graduate department for full Ph.D. study? For a shorter period of graduate study preliminary to Ph.D. work elsewhere?

Summary of Question 11

Yes	*No*	*No response*
33	4	2

Business. No objections to admitting Stanford undergraduates for Ph.D. study.

Earth Sciences. One responded "no"; the others will admit qualified undergraduates.

Education. No policy against admitting Stanford undergraduates.

Engineering. All departments accept Stanford undergraduates for Ph.D. study, but Chemical Engineering encourages them to go elsewhere.

Food Research Institute. Yes.

Humanities and Sciences:

Fine Arts. Two departments will accept Stanford undergraduates. Art and Architecture feel they should be exposed to a different institution.

Humanities. All departments will accept qualified students but feel it should be a decision left to the individual department. History reports good results with students who went elsewhere for a M.A. and then returned to Stanford for a Ph.D.

Social Sciences. Yes, in competition with other applicants. Psychology refuses to admit Stanford undergraduates unless their major was not psychology or they have family reasons for staying here.

Natural Sciences. All but two departments will accept Stanford undergraduates in full competition with others, but many feel that more breadth is desirable.

Foreign Languages. Yes, Stanford undergraduates are admitted for Ph.D. study.

The following are direct excerpts from the answers to Question 12: What other major problems (excluding budgetary problems) confront your graduate programs, and what solutions do you recommend?

Earth Sciences:

Petroleum Engineering. Problems in the order of their importance:

- More staff is needed to broaden our programs.
- More facilities, especially for graduate student study space. The original facilities were intended for ten graduates, and our number enrolled has doubled.
- More funds for equipment and other supplies for graduate student research.

Geology. Some doctoral students take too much time to complete their work. Some, from engineering or technical schools, have never studied a foreign language and spend too much time on our language requirement. We ought to trim our curriculum and encourage steady progress by all indirect means.

Engineering:

Materials Science. 1) Many graduate students desire to enter our department with previous training in some other discipline. They have difficulty in obtaining the undergraduate preparation in our field in a reasonable length of time. A new series of three undergraduate courses is being designed to provide rapid preparation for graduate students and at the same time to be useful for undergraduate students. 2) Our present graduate technical course requirements and comprehensive examinations so delay Ph.D. candidates that they have difficulty in completing a satisfactory dissertation in a reasonable length of time. The remedy being proposed is to reduce the technical course requirements, to allow many courses to be taken on a pass-fail basis, and to reduce the breadth of the comprehensive examinations.

Mechanical Engineering. A major problem still exists with respect to University Orals examinations. We do not feel that the present scheme is either effective or contributes anything.

Engineering Mechanics. As things stand now, practically every one of our acceptable Ph.D. candidates expects financial support through us, or one of the supporting agencies, in one way or other. If he does not get it from us, usually he goes to another, less expensive, school.

Chemical Engineering. 1) The problem we have is the relatively weak Master's Program compared to other School of Engineering departments. With our limited financial resources we admit primarily Ph.D. students. As yet we have not drawn a sufficient number of Honor's Cooperative students to fill the ranks of the M.S. students. More aggressive recruiting in this area will be attempted. 2) The nature of the Ph.D. final oral exam. We hope that the seminar-format, which we have tried out and like very much, will be adopted and the "medieval" three-hour inquisition on breadth of knowledge will be replaced. A test of *depth* not *breadth* would seem most appropriate at the end of a Ph.D. program. 3) We would recommend for our students elimination entirely of the foreign-language requirement in its present form.

Civil Engineering. Some of the problems are: 1) How to maintain adequate contact with persons in other departments working in similar areas. 2) How to give better advising service to students. 3) How to provide better programs for foreign students from developing countries who need a different type of education than we give our own students. 4) How to broaden the concept of the Ph.D. to include a professional emphasis rather than a research emphasis. 5) How to make better use of the University oral examination. 6) How to make better use of the language requirement.

Electrical Engineering. 1) More effective transition from incoming class to small research group. 2) Possibility for individual research experience on limited task and evaluation of it to precede qualifying exam and attachment to group. 3) Better recruiting and evaluation of admission candidates.

Industrial Engineering. The major problem faced is that of recruiting qualified faculty members. There is a major shortage of teachers in this field. The second most pressing problem is that of obtaining research support and fellowships. Industrial companies have not looked upon IE as an area requiring pure research.

Engineering-Economic Systems. The major problem is how to provide practical experience for internship programs.

Humanities and Sciences – Fine Arts:

Art and Architecture. Too large a subject for this questionnaire. If a serious discussion of general problems, and of the particular problems of the various professional disciplines is being planned, we shall be eager to participate and to express our views.

Speech and Drama. Budgeting problems are limiting the size of our faculty and the number of fellowships available for attracting good students.

Humanities and Sciences – Humanities:

History. (Responses 1 and 2 from two individual faculty members.) 1) The other major problem that I see at the present time has to do with working out arrangements so that our Ph.D. candidates would have some training in teaching as part of their graduate programs. Several years ago we did introduce a requirement in the teaching of history, but unfortunately, we have not been able to implement our intentions as fully as I think most of us would hope.

2) The greatest problem, as I see it, is to maintain effective coordination between certain factors, which are closely inter-related in function, but which tend to become separated operationally and to be treated without sufficient reference to one another. The problem is effectively to reconcile the number of graduate students 1) which the faculty of a department can train, with 2) the number

which the university can support financially, with 3) the number for whom we have physical facilities, and with 4) the number of whom we can place in good jobs at the completion of their training.

English. We are in the third year of a new, scheduled 4-year Ph.D. program. Already the results look very good. We shall need soon to evaluate the program, however. We may be herding the graduate students through a little too quickly. It's possible that 5 years (2 of study, 2 of half-time teaching, and 1 to write the dissertation) would be a more desirable figure. We need, too, evaluation of language requirements. I favor 1 language *in depth* to 3, but the department is divided.

Humanities. The fundamental problem I encounter is the proprietary feeling which professors and department heads have concerning "their" graduate students. I think the remedy is to insist that every graduate student have some units of work each year outside his own department, and that strong campaigns be undertaken to convince graduate students and graduate faculty members that graduate students are "their own" students. I choose the plural possessive pronoun for purposes of understatement.

Linguistics. 1) We need to work out some kind of system whereby graduate students can assist on research projects as a regular part of their training. 2) Since work in Linguistics is related to work of many other departments, flexible interdisciplinary programs including Linguistics must be worked out.

Humanities and Sciences — Social Sciences:

Anthropology. The new Stanford policy of assuring continuous support to graduate students, depending on satisfactory performance, emphasizes a four-year trajectory. This is unrealistic for Anthropology, which requires its students to spend between one and two years in the field, in some cases learning a new language on the spot, and in all cases collecting dissertation data. The guaranteed support period for able students should realistically be extended to five years in our case.

Political Science. In a rapidly growing and changing discipline such as political science we are constantly confronted with the problem of curricular revision and changes in our standards. One of our major problems is to develop a set of rules that we don't have to modify from year to year.

Humanities and Sciences — Natural Sciences:

Biological Sciences. We need to devise a means of providing for first and second-year students, a kind of rotating research experience in the different disciplines of biology as they are practiced by our faculty. The main weakness of our program now is that students in, for example, Population Biology cannot readily get intensive exposure for a brief period to the strategy and tactics of investigation in Developmental, Molecular, or Cellular Biology. This is a most expensive kind of education to provide, but I think it is something we badly need to do.

Chemistry. The draft.

Physics. The length of time taken to achieve the Ph.D.

Computer Science. Our major problems are: 1) lack of enough space, and especially enough space on the main campus to seat our staff and assistants and students: 2) lack of enough faculty to educate our 90 graduate students, of whom a large proportion are capable of attaining a Ph.D. (In particular, the rapid changes in the field makes us want to expand our senior faculty with great caution. However, a rapidly changing group of assistant professors will not supervise theses well.) 3) The time-consuming demands placed on our faculty by other computing activities at Stanford and around the nation.

Humanities and Sciences — Foreign Languages:

Asian. Our problems inevitably concern budgetary matters. One such problem is the length of time needed to complete a substantial piece of original work—something that can be called a dissertation—

in Chinese or Japanese. Extra fellowships are needed to support students for a fifth and even a sixth year of graduate work.

French and Italian. I would propose a redefinition of the Foreign Language Reading examination for advanced degrees:

1) to insure equality in the requirement and in the grading,

2) To relieve the language departments of what will become increasingly burdensome with increasing graduate degrees.

A full-time language examiner should be named with a small staff of assistants. Secondly, I suggest that the language examination take place in three parts in a very uniform way for all graduate students:

1) Passing a proficiency test in basic grammar and reading comprehension to indicate student's qualification to proceed to step 2.

2) Passing a reading-translation test in a test approved by a graduate adviser and the language examiner, without a dictionary.

3) Passing a reading-translation test with a dictionary from a book to be chosen by the language examiner and not indicated to the student until the time of the examination, but taken from an approved list of books made up by the student's major department.

This system would guarantee that the student have a basic grammar-reading comprehension and not just a capacity to memorize, that he read and prepare a designated number of pages in a book pertinent to his major field, and that he be able to translate with a dictionary an unprepared text also pertinent to his field.

Above all, the establishing of a central testing department and system would put an end to the type of thing graduate students complain about so frequently: it is well known that in some departments a professor knowing the foreign language simply hands the student a book and says "translate" (orally!). In other departments, the student is put through some grueling translation exercises (that French majors would have difficulty doing).

Naturally, a uniform testing system would not preclude a graduate student's being exempt from this requirement if he had taken a certain number of basic courses (French 1-22). Reading efficiency comparable to that of 22, for example, could be a standard.

We could then relieve Associate, Assistant Professors, and Lecturers of the task of measuring reading-translation proficiency, which has little to do with the teaching of language and literature.

Appendix 1 C. Response of Professor Otis, Executive Head, Department of Classics
To: Herbert L. Packer, Steering Committee, SES
Subject: Graduate Education at Stanford

I have just received the memo of the Steering Committee of SES on Graduate Education at Stanford. Let me say at once that I find this very disturbing. As you perhaps know, I am, on the whole, in hearty agreement with the pronouncements of SES on Undergraduate Education as well as with the report on Student Housing. The report on Undergraduate Education in particular seems to me to mark an important milestone both in its detailed recommendations and, above all, in its general slant or philosophy. It has been my hope and is still my hope to send you my reactions on the Undergraduate Report in another memo; by and large, as I have just said, I am in substantial agreement with that report.

Not so with the recent February 26th statement on Graduate Education! While this statement is interrogatory in form and ends with a number of leading questions, both the preliminary statement and the questions seem to me not only unsatisfactory but actually wrong-headed. Let me itemize the main points I wish to make about the preliminary statement and what I may call the "loading" of the questions, and then answer the actual questions on pages 3 to 5 of the memo in the order in which they have been asked. First, my points as to the preliminary statement and slanting of the February 26th memo:

1. While it is, of course, true that graduate education is split among a number of departments and therefore represents a great diversity of approaches and procedures, it is also true in my opinion that the primary demarcation or division of graduate education is not by departments but by subject matter or content. Thus, in my view, there are broad, basic distinctions between natural sciences, social sciences and humanities and, furthermore, there are probably lesser but still important divisions within each of these groups. There is certainly some difference, for example, between the biological and physical sciences. Within the sphere of social sciences there is also a difference between sociology, political science, economics (all of which, for better or for worse, now make considerable use of mathematical models) and history, which indeed occupies the very borderline between the social sciences and the humanities. Within the sphere of the so-called humanities, there is an important and serious difference between the sheerly linguistic and the literary studies. Philosophy, on the other hand, is again a borderline subject with distinct affinities toward mathematics and the sciences on the one hand, and traditionally at least, other affinities with religion, literature, and what has usually been thought of as the humanities. No proper consideration of graduate education, in my view, can proceed very far until such divisions as those mentioned just above are fully taken into account.

It is, of course, understandable that SES should want to take a very conservative line in respect to graduate education, as indeed the February 26th memo clearly indicates. But since, in my view, SES did not take what might be called a conservative line toward undergraduate education, its ultra-conservatism about graduate education, as indicated in the memo, is to me highly disappointing. In a nutshell, the problem presented by graduate education is, to speak briefly, the very *raison d'être* of our departmental system and our present division of knowledge by the present departments. As to the sciences, I am not really competent to speak. My general view here is that the growth of science itself takes care of the problem to some degree and that when it becomes apparent that there is need to concentrate on subject matter not treated in traditional departments, the sciences are in general quite flexible and quite ready to meet the need. The relatively recent development of biochemistry or molecular biology is certainly a case in point as is the recent development of computer science. In other words, the sciences seem to recognize new constellations of material and new approaches to it even if they do so in an *ad hoc* fashion. The problem is different in the social sciences and absolutely different, in my view, in the humanities. Do we, for example, want to continue with the traditional English Department and the traditional departments of so-called Modern Languages or with the traditional Classics Department or for that matter with the traditional Philosophy Department? Personally, I find great merit in a number of recent proposals to split literary studies, studies which involve the criticism and assessment of literature, from purely linguistic studies as well as from studies which are much more historical than they are literary or linguistic. The reconsideration, for example, of humanities, which is now going on at, to mention one specific place, the State University of New York, seems to me at least worthwhile even if it does not lead to definite results. It may not be practical to regroup departments in a sweeping way, but it is, in my view, quite practical to regroup individual teachers by, for example, creating a very strong Department of Comparative Literature and by splitting the English and present foreign language departments into Linguistic and Literary-Critical sections.

At the present moment the humanities at Stanford and at most other places (but particularly at Stanford!) are highly ambivalent and antiquated to the point of fossilization. I was much impressed with the remark of my friend, Reuben Brower, a well-known Professor of English at Harvard, to the effect that the essential course setup of English at Harvard had not materially changed in the last 100 years and certainly not in the last 50 despite very profound revolutions in literary criticism, philosophy, and the study of language over this period. This backwardness accounts, in my opinion, for a good deal of the unrest of graduate students in the humanities. On the one hand, they have been indoctrinated with what, in my opinion, is the quite valid argument for humanities as the study of human values, while, on the other hand, their assigned programs are often calculated to make these values seem quite irrelevant. I am under no illusion that SES should or can or will burn its fingers by meddling with the sacred structure of departments, but it can at least show its awareness of the problem and make some suggestions. An absolutely minimal suggestion, in my opinion, would be a plug for strong Linguistics and Comparative Literature Departments. (Their present state is non-existent or pitifully weak.) I would also be very happy to see a suggestion as to some rearrangement of the present Departments of Philosophy, English, and Modern Languages. I do not think it is too drastic to suggest that all training in language, as such, be turned over completely to a Department of Linguistics and that such departments as Classics and the Modern Literatures be wholly relieved from any linguistic responsibility. I should also welcome a suggestion as to a reallocation of functions and responsibilities between the Departments of Sociology, Political Science, History, and English.

2. The second point that concerns me is the suggestion that while Stanford should avoid a purely teaching doctorate, such as the proposed M.Phil. at Yale or the Doctor-of-Arts at Berkeley, it should at least consider a change in the Ph.D. so that the thesis will fit a teaching rather than a research goal. It is, of course, notorious that something like 80 percent of people awarded Ph.D.'s in this country never write a line or do any research after the dissertation and that there is, in short, a real conflict between the research and the teaching functions of the Ph.D. degree. But it would, in my opinion, be much better to create a subsidiary teaching degree than to cheapen the present Ph.D. My experience is that the dissertation constitutes the great hurdle it now is because many students have no research motivation. But I do not think that the answer to this is to assume that we should therefore substitute or can substitute a teaching motivation on the apparent assumption that teaching and research have no necessary or crucial relationship to each other. In actual fact, the amount of research represented by the ordinary dissertation is not very great but is, in most cases, sufficient to acquaint the student with what is involved in going to the sources of a problem. Many dissertations, I agree, are dull, trivial, and silly. But, in my experience, this is very often because the students involved are themselves dull and often also silly. Arrowsmith's recent criticism of dissertations in the humanities, a criticism that has been made hundreds of times in the past, fails in my view to take account of the fact that subjects have to be fitted to the students and that many students

are just not able to treat important subjects. Most professors, in my experience, are only too glad to let a good student work on an important subject, but they realize, alas, that a great number of students would only make hash of such subjects, with the result that they turn them on to trivialities. But such considerations as these do not destroy the essential relation of research to teaching. In other words, the Ph.D. rests on what I think is the sound principle that no one can really teach a student to get at the sources unless he has got at them himself. This consideration itself rests on the premise that teaching separated from the sources is, in every sense of the word, bad teaching.

3. I am in general agreement with the suggestions as to loosening up on the calendar and course units, and I thoroughly approve of a more flexible attitude toward the grading system. But I doubt if such changes will very profoundly affect the present situation. Here at least, so far as H & S are concerned, the abandonment of the quarter system and the adoption of the semester system would represent a far more significant advance.

Now as to the specific questions on pages 3–5: [5–6, 29 this Report]

1. I am not very enthusiastic about subsidiary degrees such as M.Phil. or Doctor-in-Arts. But I should much prefer the adoption of such degrees to any so-called "broadening" of the Ph.D. degree which would in effect modify or destroy its present research orientation.

2. Definitely not. I would increase rather than decrease the present research emphasis.

3. I think supervised teaching is a very good idea. We try to make our students do as much of this as possible and I would welcome a setup in which all graduate students would do at least a minimum of teaching.

4. Definitely yes. See what I have said above.

5. On the whole yes but I think the fundamental changes would be a reorganization of departments and the adoption of the semester system as indicated above.

6. Yes, I do. We follow this to a large degree in Classics at present, but I would not make a fetish of it. It is more important to have good professors and teachers than it is to have one tutor for each student.

7. On the whole, yes. The basic requirements for the degree are not residential anyway.

8. I doubt very much that there is any satisfactory alternative to letter grades, at least for the record. As things now stand, no student gets an appointment except by extensive recommendations from the Department.

9. Any better system of evaluating performance in examinations would be, I should think, welcomed by everyone, but I have not yet seen a system that can replace the present necessarily *ad hoc* methods of grading or evaluating examinations.

10. Definitely yes. While we in Classics have at the present moment something better than a four-to-one ratio between applications and admissions, we would greatly benefit from a better recruiting system. In this connection, I strongly recommend the availability of money for faculty to travel and see prospective students as well as to enable prospective students to come to Stanford.

11. There is necessarily some inequality of preparation among our students. By and large, however, we are committed to a Ph.D. program and are phasing the M.A. program out except as a halfway station to the Ph.D. program.

12. My best answer to this is noted in the earlier part of this memo.

I have not had an opportunity to discuss this at length in a full meeting with all members of the Department since, unfortunately, the due date of the memo (March 15th) has coincided almost exactly with the due date for departmental recommendations of new graduate fellowships. My general impression is that the Department, broadly speaking, agrees with what I have said, but I do not wish to commit it without a definite mandate. If you still wish our views after March 15th, I shall be glad to hold a meeting and send you our considered departmental opinion.

March 8, 1968

Appendix 1 D. Responses to Subsequent Questions

Supplementing the information received in response to the February 26 memorandum, three additional questions were addressed during the spring quarter to all Ph.D.-granting schools and departments of the University. Following is a summary of the responses received:

1. Would you favor the establishment of an external visiting committee for your department or area, which would periodically examine your graduate program and suggest changes as they appear desirable? (Presuming such a committee does not now exist. If such a committee does exist, we would appreciate your describing its composition and operations and your commenting on its effectiveness.)

Response	*School or Department*
Yes, favor; already have. Total = 6	Earth Sciences: Geology, Geophysics, Petroleum Engineering Education Engineering: Chemical Engineering Humanities & Sciences: Computer Science
Yes, favor; don't have. Total = 11	Business Engineering: Engineering–Economic Systems Humanities & Sciences: Art & Architecture, Speech & Drama, Classics, Humanities Special Programs, Communications, Economics, Biological Sciences, Statistics, Asian Languages
Don't favor. Total = 8	Engineering: Civil Engineering, Electrical Engineering, Materials Science Humanities & Sciences: Psychology, Chemistry, Physics, Spanish & Portuguese, French & Italian

2. Would you favor an internal visiting committee for your department, made up of Stanford faculty members from related departments, which would perform the above functions?

Response	*School or Department*
Yes, favor. Total = 4	Earth Sciences: Geology Engineering: Electrical Engineering Humanities & Sciences: Humanities Special Programs, Computer Science
Not opposed. Total = 7	Earth Sciences: Geophysics, Petroleum Engineering Engineering: Civil Engineering, Chemical Engineering Humanities & Sciences: Speech & Drama, Classics, Psychology

(continued)

Response	*School or Department*
Don't favor. Total = 14	Business Education Engineering: Engineering–Economic Systems, Materials Science Humanities & Sciences: Art & Architecture, Communications, Economics, Biological Sciences, Chemistry, Physics, Statistics, Asian Languages, French & Italian, Spanish & Portuguese

3. Do you now make a systematic effort to obtain the views of your graduate students on your programs? If so, in what manner? If not, would you favor such an arrangement?

Response	*School or Department*
Yes, through student organizations. Total = 5	Business Education Humanities & Sciences: Economics, Political Science, Psychology
Yes, informally; not organized. Total = 17	Earth Sciences: Geophysics, Petroleum Engineering Engineering: Civil Engineering, Chemical Engineering, Electrical Engineering, Engineering–Economic Systems Humanities & Sciences: Art & Architecture, Classics, English, History, Philosophy, Anthropology, Economics, Chemistry, Physics, Asian Languages, Spanish & Portuguese
Yes, through regular meetings. Total = 11	Business Earth Sciences: Petroleum Engineering Engineering: Engineering–Economic Systems Humanities & Sciences: Speech & Drama, Humanities Special Programs, Political Science, Sociology, Mathematics, Physics, Statistics, French & Italian
Yes, through questionnaires. Total = 4	Earth Sciences: Petroleum Engineering Engineering: Materials Science Humanities & Sciences: Communications, Psychology
Yes, through student participation on committees. Total = 6	Humanities & Sciences: Humanities Special Programs, Philosophy, Communications, Biological Sciences, Mathematics, French & Italian
No, don't learn views, but favor. Total = 2	Earth Sciences: Geology Humanities & Sciences: Computer Science

Appendix 2 Department Interview Summary

To gather information concerning the graduate and undergraduate programs in the School of Humanities and Sciences, the staff of the Study of Education held interviews with 27 of the departments in the School. The method of interviewing varied: in some cases, written responses to questions prepared by the staff were supplemented with subsequent verbal inquiry. Some departments attempted to gather consensus concerning the various questions; others used the department heads as their sole spokesmen. Consequently, some of the responses summarized below, particularly when the questions call for statements of opinion rather than fact or established departmental policy, may represent the views of the department chairman and not those of the department as a whole.

Copies of the preliminary draft of this summary were sent in March 1968 to the chairmen of the several departments and to the Dean of Humanities and Sciences. Any additions and corrections they chose to make have been incorporated into this final report.

Our Report II, *Undergraduate Education*, included in the appendix material responses to questions on undergraduate programs. Here we present the interview material relating to graduate programs.

1a. How are graduate students selected?

In each department a committee of from two to six members (in some small departments, the department as a whole) acts on graduate admissions. A single person is usually designated to screen applications at the outset.

1b. What criteria are used?

Almost every department employs three primary criteria in evaluating graduate applications: the undergraduate record, particularly in fields related to the applicant's projected graduate study; written recommendations from faculty members; and graduate record examinations. Those who screen the applications seem to emphasize that criterion in which they have the most confidence in a particular case: if a strong letter of recommendation is received from a known faculty member, it is quite likely to compensate for relatively weak performances in other areas.

A number of departments look for ability to carry on independent work. The Political Science and Sociology departments require written statements of purpose; Music requires an entrance test. In several of the departments, members of the selection committee rate each applicant according to a numerical scale.

1c. What is the ratio of applicants to admits and of admits to those who subsequently enroll?

The ratio of applicants to admits ranges from 1.2 to 1 in Classics to 8 to 1 in Psychology, with a median ratio of 4 to 1.

The ratio of those who enroll to those admitted ranges from .3 in the departments of History and English to .9 in the Department of French and Italian, with a median ratio of .5.

1d. Are Stanford undergraduates admitted on the same basis as other applicants?

Some departments (Biology, Chemistry, Philosophy, and Psychology) do not accept Stanford undergraduates except in very unusual circumstances. Some encourage Stanford undergraduates to go elsewhere for graduate study but will accept them (History, Physics, Political Science, and Statistics). The remaining departments accept Stanford undergraduates on the same basis as those of other institutions.

2. What are the formal requirements (courses, examinations, research) of the departments' graduate programs?

Most departments require approximately two years of course work, except for Chemistry, which emphasizes research from the outset, and Political Science, which requires only 15 units of specified course work and relies on extensive comprehensive examinations.

There is considerable variation among the departments in the type, number, and timing of examinations required. Some departments require a major examination at the beginning of the student's graduate work; others defer the examination until the end of the first or during the second year. The usual time for a major examination is near the end of the second year of graduate study.

A great many departments referred to their oral examinations as "standard university orals," assuming that all departments administer the same kind. This is not the case: in some departments the oral examination is a defense of the dissertation; in some it is quite comprehensive and probing; in others it seems to be little more than a formality.

It has been reported in various national studies that there is a wide variation in the types of dissertations required for Ph.D. degrees. All of the departments emphasize research in their dissertation requirements, an effort involving from one to several years of full-time work.

3a. What are the present degree programs?

Every department offers a Ph.D. degree, except Humanities Special Programs, which offers the degree only in conjunction with other departments. And every department, except Humanities Special Programs, offers some form of the Masters degree, although Biology awards an M.S. only in "hardship cases."

3b. What is the present status of the Masters degree?

The following departments offer Masters degree programs as major efforts distinct from the departments' Ph.D. programs: Communication, Computer Science, English (Creative Writing), Speech and Drama, and Statistics. Nearly all of the other departments offer the Masters as a consolation prize for those not invited to continue to the Ph.D. In some departments, particularly Chemistry and Physics, the number of students who receive only the Masters degree is very low. A few departments award the Masters along the way to the Ph.D. without any additional requirements. The Classics, French and Italian, Political Science, and Sociology departments require the Masters degree, complete with thesis, as a kind of apprenticeship to the Ph.D. dissertation. The Philosophy Department is eliminating the M.A. degree.

3c. and 3d. What are the future plans for Masters and Ph.D. programs? Are other degree programs being considered?

No department has imminent plans for changing its degree programs; several have made changes recently. A few departments are thinking about minor changes, and the Mathematics Department is considering an intermediate degree requiring everything in the department's Ph.D. program except the dissertation.

4a. and 4b. How many graduate students now do some teaching during their degree programs? What proportion of the graduate enrollment is this?

There is a considerable variation among the departments in the number of graduate students given teaching opportunities, ranging from a very few to all. Applied Physics and Linguistics lack undergraduate programs, and some of the science departments provide graduate students alternative opportunities as research assistants. The variation that remains among comparable departments reflects the considerable variation in department policies.

4c. What kind of supervision is given?

Most departments rely on the director of a particular course to provide whatever supervision he chooses to the graduate students acting as his teaching assistants. The English and foreign language departments provide a formal structure of supervision. Teaching assistants in English are required to take a two-unit course in the teaching of writing, and some departments make use of instruction sessions, class visits, and demonstrations.

4d. Has the department considered adopting a plan under which all Ph.D. candidates would do some teaching?

A number of departments already have almost all of their Ph.D. candidates doing some teaching or serving as research assistants (Art and Architecture, Biology, Economics, English, French and Italian, German, Music, Philosophy, Sociology, and Statistics). Mathematics and Physics see this as an ideal to be approached as closely as possible and are working toward it. The Political Science Department expressed some doubt about the policy, fearing that undergraduates would be exposed to inferior teaching.

5a. How long does it take (median and range) for doctoral candidates to complete the degree requirements up to the dissertation?

The average minimum time to complete requirements up to the dissertation is about two and one-half years, ranging from two to four years. Time required to complete the dissertation ranges from three to more than eleven years.

5b. Are efforts being made to shorten, standardize, or extend this period?

Most departments have taken steps in recent years to shorten their required program, aiming at from four to five years as the average length of time necessary to attain the Ph.D. degree. The History Department sees a need to shorten the period required for its Ph.D. program, but feels it should concentrate on those students who take longer than usual to complete the requirements.

6a. What are the grading practices for graduate students in graduate courses?

Most graduate departments use the "ABC" system, in which "C" indicates failure. The German Department, however, uses the "A" to "F" system, and Sociology considers "B–" a failing grade. Many departments employ a pass-fail system for directed reading. The Psychology Department uses the pass-fail system to evaluate all work after a student has achieved graduate standing in his first year. Classics considers grades pointless, uses only pass-fail, and is moving towards a system of short evaluations for each student's work.

6b. What are grading practices for graduate students in courses that include a large proportion of undergraduates?

About half of the departments expect more and better work from graduate students in such courses and grade them separately from undergraduates. The remainder treat all students in such courses in the same way.

7. What are the principal deficiencies of graduate education as seen from the vantage point of the department?

(The responses are, of course, too diverse to summarize. Most departments were able to recognize and examine their weaknesses objectively and with a serious concern for improvement. There were few complaints about the University's failure to provide them with sufficient staff and facilities.) Most departments were concerned with re-examining their intentions in graduate programs and with how to provide broader and more meaningful training to their graduate students. The History Department, for instance, fears that it is, perhaps, too academic; that it has not developed a good theory about the best training for historians; that it must, therefore, rely solely on a system of individual apprenticeships; and that its graduate students need better preparation for teaching.

Appendix 3 Survey of Student Attitudes & Characteristics

As part of a larger study of quality in graduate programs at ten prominent universities, the Center for Research and Development in Higher Education at the University of California, Berkeley visited the Stanford campus during the winter quarter of 1967–68. Twelve departments were selected for study: departmental chairmen were interviewed, and lengthy questionnaires were addressed to all faculty members and samples of graduate students from each department. The Study of Education at Stanford was given access to the questionnaire returns from Stanford graduate students; the information that we found most interesting is summarized in the tables that follow.

Two hundred seventy-four questionnaires were returned, distributed among types of departments as follows:

Science & Mathematics				*Social Science*			*Humanities*			*Languages*
A	B	C	D	A	B	C	A	B	C	A
13	36	38	20	21	34	18	9	39	29	13

One science department, from which only four questionnaires were returned, was dropped from the analysis.

Our purpose in this report is to present evidence of wide departmental variability with respect to students' goals and problems. Individual departments are not, therefore, specifically identified; each department is given a type classification (e.g., social science) and an alphabetic letter, which remain constant throughout the tables that accompany this report.

In Table 1 some background information on the students responding to the questionnaire is summarized.

Questions relating to TA and RA work, or to formal examination hurdles in the graduate program are not discussed in this report due to the small number of students in the sample who have had these experiences.

Table 1
Background Characteristics of Students in the Sample, by Type of Department

	Science & Mathematics				*Social Science*			*Humanities*			*Languages*
	A %	B %	C %	D %	A %	B %	C %	A %	B %	C %	A %
Sex: Male	100	92	97	95	90	68	50	89	72	59	69
Female	0	8	3	5	10	32	50	11	28	41	31
Marital status: Single	62	47	61	60	57	53	67	89	56	52	54
Married	38	53	39	40	43	47	28	11	38	31	38
Divorced or widowed	0	0	0	0	0	0	5	0	5	17	8
Have had RA experience	23	39	63	20	24	44	39	11	15	3	8
Have had TA experience	46	86	63	80	19	53	33	67	31	52	69
Progress toward doctorate:											
Completed required courses	46	74	76	61	42	70	55	43	72	52	67
Passed written exams	31	82	89	61	37	48	9	43	48	70	67
Passed language exams	46	38	49	50	68	51	64	57	83	48	56
Passed oral exams	8	12	68	6	5	18	9	0	38	37	44
Working on research	0	21	8	17	11	18	9	29	13	33	33

Table 2
Reasons for Graduate Study Decision: Percentage Ranking Reason "Very Important," by Type of Department

	Science & Mathematics				*Social Science*			*Humanities*			*Languages*
	A %	B %	C %	D %	A %	B %	C %	A %	B %	C %	A %
Interest in:											
Intellectual pursuits	67	67	55	60	57	62	83	78	69	79	69
Becoming a research worker	85	53	45	35	10	41	50	0	13	4	8
Becoming a college or university teacher	31	50	47	50	52	56	41	67	82	79	85
Acquiring scholarly competence in the discipline	38	62	49	50	65	50	53	33	28	41	54
Preparing for professional work outside the college or university	0	26	10	10	24	6	0	0	10	10	15
Getting ahead in the academic profession	0	12	11	20	19	12	12	11	3	14	15
Personal advancement	15	37	29	20	38	24	11	22	23	17	15
Honor of degree itself	9	9	3	6	5	12	6	0	8	0	18

Table 3
Reasons for Selecting Stanford University: Percentage Ranking Reason "Very Important," by Type of Department

	Science & Mathematics				*Social Science*			*Humanities*			*Languages*
	A %	B %	C %	D %	A %	B %	C %	A %	B %	C %	A %
The reputation of the University	23	44	42	50	48	53	39	67	69	62	50
The presence on the faculty of the professor with whom you wished to study	54	39	16	10	14	21	17	0	44	7	8
The reputation of the department	92	53	76	60	57	76	44	22	44	48	33
The availability of a scholarship or assistantship	31	31	32	45	29	24	61	22	31	25	83
The advice of an undergraduate professor	31	29	29	40	14	26	33	33	23	17	17

Table 4
Evaluation of Faculty: Percentage Rating Departmental Graduate Faculty "High," by Type of Department

	Science & Mathematics				*Social Science*			*Humanities*			*Languages*
	A %	B %	C %	D %	A %	B %	C %	A %	B %	C %	A %
Accessibility	100	33	84	60	33	71	44	38	62	69	38
Helpfulness and support in degree program	92	28	70	30	14	52	33	13	54	52	23
Interest in students	100	19	84	40	38	55	33	13	54	54	15
Evaluation of written work	42	6	14	10	10	12	28	38	67	41	62
Promptness in returning written work	33	8	27	5	10	21	11	0	67	48	46
Constructive criticism	85	6	35	11	24	44	33	50	51	38	23
Respect for divergent viewpoints	92	33	46	30	62	41	22	25	62	34	23
Respect for student's autonomy	85	50	78	50	43	62	39	38	63	50	15
Accuracy in assessment of student's academic ability	38	14	25	30	19	26	28	38	46	38	23
Knowledge of student's academic ability	54	14	27	15	10	26	28	38	41	34	8
Knowledge of student's degree progress	62	14	32	15	14	30	33	13	41	14	23
Interest in student's research	85	39	51	25	10	62	47	13	49	21	23
Interest in student's development as a college teacher	23	3	27	10	0	21	6	13	26	21	8
Respect for student as a student scholar	85	29	59	37	33	47	39	50	51	43	8

Table 5
Quality of Graduate Advising: Percentage Rating the Advising Received as "Adequate," by Type of Department

	Science & Mathematics				*Social Science*			*Humanities*			*Languages*
	A %	B %	C %	D %	A %	B %	C %	A %	B %	C %	A %
Orientation to the University	15	14	37	45	43	30	44	0	32	14	42
Orientation to the department	92	37	76	55	67	64	44	25	49	24	58
Assistance in planning course of study	85	56	87	55	75	56	67	62	63	45	67
Advice on formal requirements of the department	92	58	89	85	81	94	78	56	67	61	75
Informal advice on the strategy of doctoral study	77	42	53	55	48	53	53	25	41	29	25
Assistance in obtaining financial aid	85	86	92	75	76	76	94	67	64	48	85
Encouragement to persist toward goals	85	61	68	35	33	29	67	22	59	50	25

Table 6
Evaluation of Student Progress: Percentage Finding Means of Evaluation "Most Helpful," by Type of Department

	Science & Mathematics				*Social Science*			*Humanities*			*Languages*
	A %	B %	C %	D %	A %	B %	C %	A %	B %	C %	A %
Grades	0	9	11	0	10	6	18	33	13	17	15
Conferences with faculty	23	14	13	10	15	15	22	11	24	18	17
Professor's written comments on assignments or lab work	0	9	5	5	10	3	33	11	41	24	23
Evaluation by other graduate students	8	12	16	25	15	9	17	44	19	7	15
Evaluation by research committee	15	6	5	5	5	3	12	11	3	0	0
Self-evaluation	45	54	58	53	45	45	53	12	62	75	58

Table 7
Helpfulness of Various Communications Channels: Percentage Ranking Item "Most Helpful," by Type of Department

	Science & Mathematics				*Social Science*			*Humanities*			*Languages*
	A %	B %	C %	D %	A %	B %	C %	A %	B %	C %	A %
Written notices from:											
department graduate adviser	0	17	27	21	10	13	6	0	8	17	15
dean	0	3	3	0	0	3	0	0	0	0	8
student's faculty adviser	0	18	13	21	0	10	0	0	27	7	18
Verbal communications from:											
department graduate adviser	0	14	24	5	24	26	17	0	13	0	25
dean	0	0	3	0	0	0	0	0	3	0	0
student's faculty adviser	92	62	53	47	17	66	44	22	62	24	54
department secretary	23	23	39	21	70	48	22	33	15	24	31
graduate student grapevine	23	40	53	68	20	39	50	56	67	64	67
Notices on department bulletin board	36	49	11	16	43	3	0	67	21	24	31

Table 8
Contributions to Educational Development: Percentage Replying Program Aspect "Contributed a Great Deal," by Type of Department

	Science & Mathematics				*Social Science*			*Humanities*			*Languages*
	A %	B %	C %	D %	A %	B %	C %	A %	B %	C %	A %
Planning own study program	25	14	13	30	15	21	17	22	32	34	23
Meeting course requirements	23	11	29	20	30	18	22	44	13	28	31
Meeting language requirements	0	6	3	10	5	0	6	0	21	3	15
Preparing written assignments	31	22	34	20	15	29	50	56	42	62	54
Seminar presentations	69	47	13	40	30	18	17	22	50	38	62
Selecting a research topic	23	25	16	20	20	38	33	11	34	41	38
Preparing a research proposal	33	36	8	5	0	47	24	0	14	21	31
Assisting faculty with their research	25	39	26	5	15	18	56	0	13	3	0

Table 9
Usefulness of Required Foreign Language: Percentage Reporting Language "Used a Great Deal" or "Used Occasionally," by Type of Department

	Science & Mathematics				*Social Science*			*Humanities*			*Languages*
	A %	B %	C %	D %	A %	B %	C %	A %	B %	C %	A %
Required foreign language used:											
in course work	17	15	11	15	19	9	6	0	56	28	67
in research	42	57	21	60	10	16	20	0	67	34	82
in outside readings	33	29	32	60	19	6	24	11	64	38	84

Table 10
Effect of Doctoral Education on Individual Traits: Percentage Reporting Traits "Strengthened," by Type of Department

	Science & Mathematics				*Social Science*			*Humanities*			*Languages*
	A %	B %	C %	D %	A %	B %	C %	A %	B %	C %	A %
Sense of self-confidence	62	51	37	50	40	48	39	37	51	55	46
Sense of autonomy	67	62	49	45	60	53	39	22	55	55	15
Interest in ideas	67	68	49	60	60	41	50	33	61	72	46
Interest in research	77	71	60	30	47	53	61	56	50	38	31
Interest in teaching	23	40	46	55	37	48	39	89	58	62	77
Interest in student's field	77	66	65	72	50	38	67	50	71	66	70
Interest in other fields	25	69	31	45	55	59	44	33	84	57	62
Scope for creative work	83	69	51	60	48	39	39	56	42	48	39
Ability to think critically	100	77	59	70	90	71	88	100	84	86	92
Active interest in social issues and problems	38	44	43	50	35	39	28	33	41	55	46

Table 11
Satisfaction with Career Decisions: Percentage Replying "Yes," by Type of Department

	Science & Mathematics				*Social Science*			*Humanities*			*Languages*
	A %	B %	C %	D %	A %	B %	C %	A %	B %	C %	A %
Would select:											
the same university	100	91	85	84	72	79	67	78	74	77	58
the same field of specialization	100	91	82	94	89	87	72	100	84	92	54
the same dissertation adviser	100	91	81	82	40	62	60	100	73	62	86

Appendix 4 A Proposal for the Reformation of Graduate Education at Stanford University

by Mark Mancall, Associate Professor, History

> "The truth is that the Doctor-Monopoly in teaching, which is becoming so rooted an American custom, can show no serious grounds whatsoever for itself in reason. As it actually prevails and grows in vogue among us, it is due to childish motives exclusively. In reality it is but a sham, a bauble, a dodge whereby to decorate the catalogues of schools and colleges. . . .
>
> "Men without marked originality or native force, but fond of truth and especially of books and study, ambitious of reward and recognition, poor often, and needing a degree to get a teaching position, meek in the eyes of their examiners,–among these we find . . . the unfit in the academic struggle for existence. There are individuals of this sort for whom to pass one degree after another seems the limit of earthly aspiration."
>
> –William James, 1903

> "Why is the degree made the be-all and the end-all? It is beginning to be known like a 'union card' for labor."
>
> –Andrew West, 1912

> "American graduate education is in a rut."
>
> –Walter Jessup, 1944

> "Current pressure forces us to examine our myth-enveloped Ph.D. with candor. What we see makes us look away with shock."
>
> –The Committee on Policies in Graduate Education of the AGS, 1957

Introduction[1]

In the history of American education, the graduate school institution was established comparatively recently, developed rapidly, and has never succeeded in resolving most of its fundamental problems. Harvard College was established in 1636, but the first graduate school in the United States came into existence only in 1876 when Johns Hopkins was created as a graduate university under the presidency of Daniel Coit Gilman. Prior to 1876, various schools such as Harvard, Michigan, Yale, Columbia, Pennsylvania, Western Reserve, University of the South, and Virginia had made efforts to create graduate programs, but with little or no success. Many of these schools offered their own alumni an unearned Master's Degree for which they qualified "by staying alive and out of trouble for three years after graduating from college and by giving very modest evidence of intellectual attainments." Graduate education was not popular in these United States. In 1816 the President of Harvard College stated that young men "must not be detained from active life, professions, etc., longer than now, nor may the expenses of our education be much increased," an argument not unspoken today with reference to the current condition of American graduate education.

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[1] This report could not have been prepared without the invaluable aid and imaginations of Sally Main and Kathleen Farinacci. However, I assume all responsibility for its errors, misconceptions, overstatements, extremes of expression, etc. The quotations cited in the report, most of the information and statistics, as well as many of the thoughts and ideas, derive from the following:

a. Bernard Berelson, *Graduate Education in the United States* (New York: McGraw-Hill Book Company, 1960).

b. Glenn A. Reed, *Criticisms of the American graduate school, 1900–1945*, an unpublished Ph.D. dissertation (Stanford University, 1950).

c. Chester Hersey Robinson, *The work of eight major educational associations toward the improvement of college teaching, 1920–1940*, an unpublished Ph.D. dissertation (Stanford University, 1950).

d. Ann M. Heiss, "Berkeley doctoral students appraise their academic programs"

e. Thomas J. Banta, "Academic health"

f. Conversations with Professor Heiss and various Stanford colleagues.

The successful establishment of an institution of graduate education was the result, remarks Bernard Berelson, of a variety of forces: "the needs of the times, the pressures of science upon the classical curriculum, the patriotic competition with the German system, the dissatisfaction with the current character of collegiate instruction, the inherent attractions of advanced study." Because of conservative opposition to the new higher education, graduate studies were firmly established by the creation of a new institution with no prior "traditions, programs, interests, or personnel" to obstruct its development. Moreover, though it borrowed from the experience of European, particularly German, universities, Johns Hopkins had not been launched as a "German university, nor an English university, but an American university based upon and applied to the existing institutions of this country."

By 1900 seven universities in the United States conferred 1 percent or more of the number of doctorates awarded annually. In order of activity, they were Columbia, Harvard, Chicago, Cornell, Yale, Pennsylvania, and Johns Hopkins. By 1925, when Stanford entered this category, a total of 20 institutions awarded degrees on this magnitude. By 1955 the number was 30. At the same time, the number of institutions offering doctoral degrees increased amazingly. About half the Ph.D. degrees awarded in the United States by the middle of the third decade of this century were produced by five institutions, which were Columbia, Chicago, Harvard, Johns Hopkins, and Yale. In the 1950's, less than a quarter were awarded by the five most productive institutions: Columbia, Wisconsin, California, Harvard, and Illinois. In 1908, 38 universities awarded 394 doctoral degrees, while by 1958 175 institutions awarded a total of 8,942 degrees. In 1940, some 100 institutions awarded doctoral degrees and about 300 awarded the M.A. By 1958, these figures had increased to 175 and 569 respectively.

An increase in the fields in which doctoral degrees are awarded has accompanied the expansion of graduate education. By the end of the 1950's, doctoral degrees were awarded in well over 550 "fields" (identified by distinctive names), although only one institution awarded degrees in almost 400 of these "fields." This is comparable to some 149 fields in which doctorates were awarded by the end of the second decade of this century. The number of real "fields," as Berelson points out, is really only between 60 and 80 in number, depending on how "field" is defined, "all the others [being] variants, offshoots, or combinations." Each "field," however, is identified not only by name but by a distinctive set of requirements. Between World War I and the end of the 1950's, moreover, the fields offered by any particular institution doubled, from about 25–30 to about 55–60 in the major universities.

The structure of the fields in the arts and sciences has, evidently, remained approximately the same for the last half-century. Doctorates in chemistry were awarded by 20 institutions in the 1916–1918 period and are now awarded by 110 institutions. This is Berelson's list of the number of institutions awarding doctoral degrees in specific fields:

> chemistry (110); physics (90); psychology, mathematics, history, and English (75 to 85 each); economics (65); philosophy (50); and so on.

It should be noted that the physical and natural sciences top the list. Similarly, the proportion of degrees awarded in the major divisions of knowledge has shifted perceptibly over the same period of time, a development that mirrors one of the problems of graduate education and influences it at the same time. These were the percentages of doctorates awarded by field of knowledge in the decade 1911–1920: the professions (and education): 9 percent (and 6 percent); physical sciences: 30 percent;

biological sciences: 14 percent; social sciences: 22 percent; humanities: 25 percent, for a total of 5,230 degrees. A remarkable change had occurred by the years 1951–1958, as these figures show: professions (and education): 34 percent (and 17 percent); physical sciences: 24 percent; biological sciences: 12 percent; social sciences: 19 percent; humanities: 11 percent, for a total of 67,770 degrees. Incidentally, the growth of graduate education was paralleled by the establishment and continuing development of professional and scholarly journals and societies, but the significance of these figures is that not much more than half of the doctoral degrees granted in 1957–1958, for instance, were academic degrees, as opposed to professional, defined as any high-level program that trains for practice or doing rather than for learning or teaching, for example the training for industrial practice in chemistry, for public administration in political science, or for clinical work in psychology.

What is most remarkable about the history of graduate education in the United States is that many of the same problems and issues have been raised decade after decade, with no real solutions forthcoming.

The Issues

One of the most interesting aspects of this problem is the persistence of a body of criticism and problems that have changed little over time. This must be explained largely in terms of historical accident: the superimposition of a Germanic graduate education system on a college modeled after the English undergraduate system, which has resulted in conflicts within graduate education and between graduate and undergraduate education that have never been resolved either on the conceptual/intentional or on the institutional levels.

The American derivative of English education sought to produce the well-educated gentleman, the man of letters, the cultivated dilettante (in the best and most positive sense of that word). In nineteenth century Germany, graduate education was professional in nature, preparing students for the law, the church, the civil service, teaching, and the like. It sought to train scholars specialized in particular and discretely defined bodies of knowledge. Johns Hopkins and all later graduate schools perpetuated the objectives of nineteenth century Germanic education. Not only is there an inherent conflict between the nature of undergraduate education as preparation for graduate education–the problem of the adjustment of the product of one approach, the generalist English, to another, the professional Germanic–but the failure of independent graduate institutions to develop in America, with the exception of a few highly specialized schools such as the Rockefeller Institute, meant that the conflict would find its expression within one administrative and intellectual organization, the university.

The conflict engendered within institutions and faculties that embraced both types, the one on the undergraduate and the other on the graduate level, led to the development of a structure that applied to both: examinations, grades, the lecture system, required class attendance, all characteristic and perhaps appropriate in one or another form to undergraduate education, were applied to graduate education, where perhaps they were inappropriate. It has also vastly complicated the problem of course offerings, which must include at least three categories in the system as presently constituted: specific undergraduate courses, specific graduate courses, and mixed courses with approximately the same requirements for both in a situation where educational purposes differ. One of the more ludicrous examples of the results of this melange is the "graduate B–."

At the same time that the structure of college education influenced graduate schools, the Germanic system of graduate education inevitably influenced undergraduate education, a legacy with which we are still struggling today in terms of departmental majors, the question of undergraduate professional training, the frustrated desire for a broad humane curriculum on the part of both students and some faculty that the "general education" concept and requirements represents. At Stanford this problem is seen clearly in the failure to provide even minimally distinguishable facilities for graduate students, apart from a limited number of special courses and a "graduate division" on the administrative side.

The conflict between undergraduate and graduate education is paralleled by conflicts within graduate education itself, between the concept of knowledge for the sake of knowledge and learning, and the utilitarian uses of knowledge for immediate application to the needs of American society, which influences the allocation of resources and the structure and intention of instruction, emphasizing still further the dichotomy between undergraduate and graduate education. This conflictual dichotomy is exacerbated by the fact that, with few exceptions, such as Chicago, most American institutions not only embrace both types of education but have only one faculty for both undergraduate and graduate training, thus embodying the conflict in the very persons of the instructional staff.

A further consequence of the influence of undergraduate education on graduate school has been the failure to distinguish the broad fields of knowledge at the graduate level, which in turn has led to the preeminence of science and the influence of science on other fields. The "scientific approach" to research and training that characterizes so many fields in the social sciences and humanities today and which has tended to lessen the humane qualities of some of the disciplines in those two bodies of knowledge has been as much the product of the structure of graduate school as it has been of the growing "scientism" of our society, itself partly the product of the educational system in which so many of our professional practitioners gained their training. Because of the historical accident that graduate education in America was established and grew to maturity in "an increasingly scientific and technological age," it is not surprising that much of the criticism of graduate education comes from students and faculty involved in the other two branches of knowledge. Herein is to be found the basis for the ongoing dispute over the professional and humane purposes of graduate education.

The primary cult of graduate education is research training; this is evident in most departments where training for education is invariably far behind research training. In part, this is because the classical humane curriculum has not been provided with the institutional supports it requires to resist the pressures of the progressively increasing body of knowledge, particularly in the sciences. Coupled with the increasingly scientistic approach to knowledge in all fields was the growing emphasis on research, as opposed to education, the former becoming not only the major activity of graduate study but its very *raison d'etre*. The emphasis on research training and professionalism that characterizes our graduate education raises serious questions concerning the preparation of educators for undergraduate or college level education, where the humane and broad generalist approach is in conflict with the structure and type of training offered students in those institutions primarily charged with training educators. This continually exacerbates the problem of finding appropriate undergraduate educators. The young Ph.D., narrowed and finely honed by his professional training, tends to perpetuate his training in his early years of teaching, thus influencing undergraduate education away from its primary objective of producing broadly educated men.

The graduate curriculum provides little or no time for broad educational experiences, which have been largely relegated to undergraduate education where, in turn, the product of the graduate curriculum executes his task but poorly. The decline of political theory, social thought, the fear on the part of many graduate students to engage in speculation, the desire for intellectual security as opposed to a willingness to challenge accepted conclusions, the transformation of the thesis into a research project—all these witness the decline of originality and the rise of mediocrity among our students. Except in rare cases, the system tends to perpetuate mediocrity and honor the performance of tasks rather than to encourage speculation. The growth of knowledge is too often measured by the addition of new facts rather than by increased wisdom. Furthermore, these characteristics are perpetuated increasingly at the faculty level as the habits of graduate education become ingrained in students who become faculty members. In short, the primary objective of graduate education as presently constituted is the correct performance of tasks, and William James's criticism of graduate students as "meek in the eyes of their examiners" is as true today as it was in 1903. The cult of specialization and professionalization has tended to destroy the concept of a "community of learning," and those tentative efforts now being made to cross disciplinary lines as a means of reintegrating knowledge both among faculty and students must be encouraged by changes in the structure of graduate education itself if we are to develop the university as a truly *intellectual* center.

Ironically, the university has declined as "the dominant center for research itself" while it remains "the home of research *training*." Increasingly since World War II, government and private industrial and research institutions have moved in on the research scene. A survey made in the 1950's indicated, for instance, that "of all the authors in the leading learned journals in 22 disciplines and fields in recent years, only 65 percent were in academic life." In the humanities, the growth of literary and artistic establishments outside the university, still mythically considered as the locus of the "life of ideas" *par excellence*, is characteristic of our age, a breach not healed by the development of university or college sponsored summer writers' institutes or summer arts festivals or creative writing programs. Another instance of this trend is the growing distinction between "pure" and "applied" research, the institutionalization of these two types of research in separate organizations or, within the university, in separate departments and schools, with a concomitant growth in the proportion of graduate students obtaining advanced training in "professional" as opposed to the more traditional and purely "intellectual" fields. Here too we have witnessed the influence of graduate education on undergraduate education, at Stanford in the development of undergraduate training in such fields as engineering, not traditionally part of the classical college curriculum nor conducive to a truly humane education. Herein lies, to some measure, the conflict between general and specialized education on the undergraduate level.

The Ph.D. degree, increasingly the primary graduate degree, is symbolic of the scientistic approach to knowledge and, therefore, it has lost its significance as a mark of education and has become the antithesis of true learning. As one educator remarked at the 1912 AAU meeting, "Since the degree is conferred in Sanskrit and animal husbandry, in philosophy and highway engineering, for what does it essentially stand?" Attempts to solve this problem within the existing structure by minor technical changes have failed. Harvard's President Lowell remarked concerning the conferral of graduate degrees,

> President Gilman's one mistake, if it was a mistake; and if so, it was certainly not his alone. . . . If his main object was to develop original thinkers, men expected to contribute deeply to knowledge, who cannot be very numerous in any generation, he would have done better to confer on them no degree and let their productions speak for themselves.

Lowell introduced the Society of Fellows at Harvard as a means of opposing the system of the doctorate, and Junior Fellows were initially forbidden to work for graduate degrees during the term of their appointment. Today, however, under the pressure of the academic community and the overriding importance of the dissertation and Ph.D. degree, most Junior Fellows work for a degree during their term.

The emphasis on scientific research training, and the overwhelming importance of the Ph.D. degree, is nowhere more obvious than on the shelves of our libraries, increasingly filled with theses of marginal interest executed "in satisfaction of the requirement" rather than in the search for truth and humane knowledge or wisdom. The intellectual atmosphere of graduate education–one is almost tempted to identify it as "anti-intellectual"–is supported not only by scientism but by an atmosphere of utilitarianism and the demands of the college community as well. The image of the university as the servant of the community rather than as at the service of Man permits the community or society in which the university is located to make utilitarian demands on graduate education which, because the university must depend on the community for its resources, it cannot but heed. Moreover, the colleges' demands for Ph.D.s for faculty appointments reenforces the preponderant importance of Ph.D. work in graduate school and emphasizes research rather than educational ability as the primary prerequisite for appointment to college faculties. As early as the first decade of this century, both Yale and Johns Hopkins tried to distinguish between the M.A. and the Ph.D. for education and research respectively, but this attempt has failed continually, largely because of college demands and the image of the Ph.D. degree as a "higher degree" compared to the M.A. Richard Hofstadter remarked, "The exceptional regard that exists for the Ph.D. in academic circles, where presumably most persons know better, has never been fully explained." Nevertheless, the primacy of "research" over "scholarship" and "learning" as the primary purpose of that process which produces our educators will continue to create serious difficulties throughout the higher educational system unless it is faced resolutely.

The lamentable condition of the Ph.D. degree has been supported by the successively rapid growth and expansion of primary, secondary, and college education in the United States and by the progressive inclusion of larger proportions of our population in each stage of the educational process. This growth places growing demands on graduate education as a source of teachers and teaching materials, which in turn influences the nature of graduate education itself. One of the latest and most pernicious manifestations of this problem is the insistence by colleges on Ph.D.s for their faculties. This demand places greater burdens on the perpetually scarce resources for graduate education, leading to conceptual disturbances and an unfortunate and deplorable emphasis on turning out a product as quickly and efficiently as possible in utilitarian terms. The recent proposals by the Dean of the Graduate Division of Stanford University with regard to the size of the graduate student body and the length of Ph.D. programs is but one case in point. The execution of tasks cannot be demanded within a time schedule. The mellowing which wisdom requires cannot take place in the present pressure-cooker atmosphere of graduate education.

Professionalization and specialization at the expense of learning is supported by the mechanistic structure of graduate training. As early as 1912, and again in 1916, Dean Woodbridge of Columbia University remarked that the original aims of the Ph.D. were being perverted because the system supported the inadequate training of students for education, on the one hand, and overspecialization in subject matter, on the other. The result, he said, was "proficiency rather than scholarship." Or again, "graduate instruction . . . is not conducted . . . in a way which forces students into habits of independent and controlled study." This problem has given rise to the image of the Ph.D. as a "union card." The uses of grades, classes, and dissertations in present form provide the mechanistic approach to graduate education so stultifying to individual thinking. Ways must be found to liberate the graduate student while at the same time providing him with high incentives to resume the role of pioneer in all fields of learning. While the sciences by their very nature permit this today, the social sciences and humanities tend not to. This must be changed by reformation of the system itself.

In addition to necessary structural changes, recruitment and selection policies for students have been, and remain, a crucial issue, particularly in view of the increasing demand on scarce resources. As early as 1919, Abbot Lawrence Lowell referred to the "monstrous" numbers of graduate students and said, "we are in danger of making the graduate school the easiest path for the good but docile scholar with little energy, independence or ambition. There is danger of attracting an industrious mediocrity which will become later the teaching force in colleges and secondary schools." Time has justified his complaint. It is apparent that far more care is taken in the selection of undergraduates than in the selection of graduates. This is remarkable in view of the fact that the selection of graduate students to a great extent implies the selection of future faculties.

All this suggests that some of the problems of undergraduate education must find their solutions in changes at the graduate level. Even from the utilitarian point of view, the conceptual weaknesses of graduate education must be resolved. Science and graduate school are increasingly viewed in our society as in opposition to humanistic values. Moreover, graduate school today exists in an age when science is being increasingly questioned as capable of providing answers to our social and human problems, and the debate will continue to wrack our institutions in far more rigorous and at the same time more emotional terms than previously. Here is a source of some of the great discontent we feel with both undergraduate and graduate education today; it is unresponsive to the needs of our times.

Some Proposals

Recruitment & Admissions

The graduate student body at a university with Stanford's academic status, national reputation, and intellectual pretensions, must be considered a body of men and women who will become responsible for the education of succeeding generations of American students or who will find careers in private or governmental organizations where they will be in a position to exert a guiding and creative influence on the future of our society. To no little extent, their future careers will be propelled forward by their possession of a Stanford degree and, at the same time, Stanford's status and reputation will be influenced by their performances. Moreover, if Stanford, as it should be, is in a position to offer superior graduate training to its students, it must select its students with a greater concern for their abilities to take advantage of Stanford's resources and with an eye to the University's intellectual and societal responsibilities than is at present the case. It is obvious that far greater care is given to recruitment and selection of undergraduate admissions than is given to graduate admissions. Whatever improvements are necessary and will be made on the undergraduate level, a reconsideration of graduate recruitment and admissions is an absolute necessity if the quality of the graduate student body, the significance of the Stanford degree, and the level of sophistication of advanced education is to be maintained or, more correctly, strengthened in the face of increasing demands on the University's resources at the same time that these resources do not increase rapidly enough or even diminish.

To this end the following is proposed:

1. A system of active recruitment be instituted whereby the University, through its various institutionalized disciplines, will undertake to seek out the most promising undergraduates both at Stanford and at other appropriate colleges, will invite them to consider graduate education at Stanford, and will utilize its limited fellowship and assistantship funds to bring these students to Stanford. The Latin American and Asian studies programs are two cases in which this approach has already been put into practice. The Graduate Dean's innovative plans for the use of fellowship funds is a move in the right direction. But the University must play a more active role in finding its graduate student body than it does at the present. A smaller graduate student body composed of the highest quality students will ultimately benefit the University more than an increase in numbers and will contribute to the improvement of the quality of our degrees.

   Certain lessons can be learned from admissions procedures currently used for undergraduates. Recruitment can begin at the junior year through the identification of promising undergraduates who will receive advice and guidance in the remaining period of their undergraduate education with the aim of encouraging a smoother entrance into graduate school and improving their preparation therefore. Under certain circumstances, exceptional juniors may be admitted to graduate work before completion of their B.A. degree work and even offered fellowship support if they merit it. This would take account of the declining value of the B.A. degree in the face of the growth of graduate training in the U.S., would reward merit and performance in an efficient and appropriate fashion, and would undoubtedly lead to an improvement of the graduate student body. While the numbers involved in such a program would necessarily be small, their significance could be great.

2. The academic staff of the University should take a more active role in the recruitment of undergraduates in a more systematized fashion than is presently possible. Small teams of professors–perhaps composed of the directors of graduate studies in departments selected from each of the major fields of knowledge–could make annual visits to other institutions for the purpose of active recruitment. While the AAU places certain limitations on competition between universities for potential graduate students, it is obvious that the major institutions do compete and may begin to do so in a more systematized fashion than is currently the case.

3. The University should begin, in those departments where it is not now the practice, to identify those undergraduates from our own student body who would benefit us by remaining on as graduate students. In certain departments it is customary to encourage undergraduates to go elsewhere for graduate training. However, two arguments may be made against this. First, if in a particular field Stanford is outstanding, there is no reason why undergraduate status at Stanford should be a basis for discouraging a student from seeking graduate training here too. Second, where an undergraduate has established a close working relationship with a professor of the type we believe to be most suitable to graduate work, i.e., the "guru" or master-disciple relationship, and the student desires to continue work in that professor's discipline, it can be an extraordinarily effective basis for creative graduate education. Stanford is not a provincial university that must encourage its students to seek graduate status at more metropolitan university centers, nor is its graduate program in general necessarily inferior to those offered at other universities.

This, incidentally, could have an interesting side result. In those areas of knowledge where differences of interpretation or opinion are an important aspect of intellectual life, it would encourage schools of thought and education to grow that would enliven the country's intellectual life and the individual discipline's discourse. To the best of my knowledge, neither Harvard nor Yale nor its students have suffered from this approach. It would also encourage greater continuity in what is supposed to be an intellectual community.

4. The Graduate Dean's plan to offer fellowship support to incoming graduate students for certain periods of time (given the requisite standard of performance) of more than a year, thus obviating the annual fellowship scramble and its attendant psychological stresses, should be applauded and used as a spur to a more rigorous recruitment procedure.

The Degree Structure

The present structure of higher degrees takes account neither of the needs of the academic profession nor of the individual student. As the institutions of higher learning proliferate in America, and as more and more students seek higher degrees, we must refine the present system if we are to maximize the use of human resources. At present, there is remarkable wastage in the system. For instance, many students not really interested in advanced research are required to spend long years and great amounts of money, either from their own or from institutional sources, in research and writing doctoral theses when, in fact, their own interests and native abilities would more profitably be directed toward the perfection of teaching skills. Furthermore, the development of large junior and state college systems in California and New York (and in the future undoubtedly in other states as well) will require college level faculties whose primary concern will be teaching rather than research. At the same time, students whose primary concern and orientation is research are often required to enter teaching at such an early point in their careers that some of the most productive years of their lives are spent in an unfortunate prolongation of research activities due to the requirements of teaching at the same time that they complete their dissertations or first books.

This situation has come about because of the devaluation of the M.A. degree in many disciplines and the growing complexity of the Ph.D. structure. The two are closely related. The Ph.D. today is really two or more degrees, differentiated by the name of the granting institution. It is widely recognized, for instance, that a Ph.D. in history from Harvard, Stanford, or Princeton is not the same degree as a Ph.D. from Montana or Arizona. At some institutions, like Harvard, the Ph.D. represents a rise in real value as over, say, two decades ago, because the quality of training has risen. There is, in other words, a differential in the Ph.D. between cheap degrees from second or third rank institutions and better Ph.D.'s from first rank institutions. This has developed because, for historical reasons, the ability to grant the Ph.D. became an institutional status symbol. As the Ph.D. supply and demand situation changed, weaker institutions were able to insist on possession of the Ph.D. as a prerequisite for non-tenure appointments. The ability to command Ph.D.'s for non-tenure appointments has itself become another institutional status symbol.

There are three ways to rectify and clarify the present situation. First, the Ph.D. can be further devalued. Second, it can be raised in value. Third, it can be kept approximately as is, but greater diversification and freedom can be introduced into the system through adoption of a more sophisticated degree structure. The first can only lead to a devaluation of the institution's graduate program in the eyes of the general academic community and can serve neither the interests of the faculty nor the students. The only way to avoid harming an institution through devaluation would be to generalize the devaluation throughout the academic system, an almost impossible task. This is why granting Ph.D.'s for writing a short, 100-page paper, for instance, is not a workable solution to the problem, though it has often been proposed. On the other hand, an improvement in quality can be accomplished unilaterally by a variety of methods, particularly through admissions decisions and the guidance of students into a more refined degree structure.

It is therefore proposed that the present degree structure be reorganized as follows:

1. The *Master of Arts Degree* (M.A.) should be specified in all relevant departments as a degree aimed at secondary school teaching. It should be awarded not, as at present, to students who have failed their oral examinations or as a half-way point to the Ph.D., but rather it should be awarded to students who, on their own volition or at the suggestion of their advisers, are preparing for secondary school teaching. It should be given for satisfaction of the following requirements:

a. a minimum residence requirement or fee payment;

b. demonstration, through writing a bibliographical essay, of control of the English language monographic materials necessary for secondary school instruction (or whatever other materials a particular discipline determines as necessary);

c. demonstration, by writing an analytical essay, of the ability to evaluate teaching materials suitable for secondary school instruction in the candidate's field;

d. the preparation of a secondary school curriculum in the candidate's field.

Such a program would contribute to the improvement of the intellectual content of secondary school teaching.

2. A new degree, the *Master of Philosophy* degree (Ph.M.), should be introduced. It would be designed from the ground up for college teachers and would be on a par with the Ph.D. but would aim at preparing people who are interested primarily in college *teaching* or who, for other reasons, are unable to complete Ph.D. thesis work. It would be the degree appropriate to teaching in colleges, state colleges, and junior colleges; and it would be granted upon completion of the work described below. As of fall 1968 the Ph.M. degree will be awarded instead of the M.A. degree at Yale University. In the interests of greater freedom and refinement of the degree structure, however, it is proposed that the Ph.M. be awarded in addition to the M.A. at Stanford.

The Ph.M. should be awarded for the following:

a. a minimum residence requirement or fee payment;

b. demonstration, through writing a bibliographical essay, of control of the English and foreign language monographic materials necessary for college instruction in the candidate's field;

c. demonstration, by written examination, of the candidate's ability to control the languages necessary for bibliographical access to the monographic materials in his field, the languages to be defined *in terms of his specific interests* in consultation with his tutor and department. The University would not undertake to define any other language requirement for this or any other degree;

d. preparation of a full lecture course (30 written lectures), to be completed before oral examination; such a requirement would be a good preparation for the candidate's orals, force him to conceptualize at a necessary level of abstraction and, furthermore, be excellent preparation for his first year of teaching, thus avoiding some of the strains that presently characterize that year;

e. completion of at least one seminar-like research project, designed to test the candidate's understanding of the research process;

f. completion of at least one quarter of teaching, as defined by each department;

g. a departmental oral examination in the candidate's field designed to test his verbal control of the concepts and materials necessary for teaching at the college level and adequate to serve as a basis for further work should the candidate so choose at some later point in his career.

The introduction of this degree would have the following salutary effects:

a. It would release those students who for one reason or another are financially unable to pursue the longer research route to a higher degree from the burden that the present system entails.

b. It would restore or re-emphasize the teaching function of college-level faculty, functions that today are all too often neglected. It would, furthermore, provide a recognized avenue of advancement for students whose primary interest or skill lies in teaching rather than research. Many institutions that hire our students lack research facilities, for instance, and this works a hardship on students in a system where research remains the only avenue to job placement or advancement. It would also recognize the fact that many institutions lacking serious research facilities already make tenure appointments primarily on the basis of teaching experience or abilities. The introduction of this degree would place people on the academic market in conditions more suitable to individual needs or desires and institutional demands than the present system allows. It would also raise the quality, by comparison, of the Ph.D. degree.

3. The *Doctor of Philosophy* degree (Ph.D.) should be granted to those students who have successfully completed the requirements listed below *in addition* to the requirements for the Ph.M. and should aim at the preparation of students who will teach and do research at first rank institutions. The quality of this degree can be improved by control of admission procedures and faculty guidance. The additional requirements should be:

a. completion of at least two seminar papers or research projects, designed to teach the candidate the skills necessary for dissertation work;

b. completion of a thesis, as presently designed;

c. completion of a University Oral Examination (in addition to the departmental oral), to be held by the University under the sponsorship of the candidate's department and open to the public, on the subject of the candidate's doctoral dissertation. The candidate could take this examination any time after his completion of the departmental oral, which itself would come only after completion of all other requirements. The timing of the University oral would depend on the candidate's choice, in order to encourage its use as an educational, rather than a testing, process. He might take it in preparation for his thesis, as an opportunity for evaluation while writing it, or for review upon its completion. The University oral board would be composed of at least four members, of whom at least one-half would be from outside the candidate's department but in fields related to the work of his thesis. Thus, for instance, someone working on urban history would be examined by two historians and, say, an urban sociologist and a statistician. This examination would serve the important didactic purpose of providing the candidate with an evaluation of his project at whatever point he felt it most advantageous and, at the same time, force him to consider the implications of his project on an interdisciplinary basis.

The Ph.M. and Ph.D. degrees would be on a par, both recognized as preliminary to the higher degree described below. The existence of these two degrees side by side would tend to deemphasize the "union card" quality of the doctoral degree and to emphasize its symbolic value as recognition of creative abilities in research. They would both aim at the 20–40 year age bracket, though obviously not be restrictive in that sense.

4. A new higher degree, the *Doctor of Humanities*, the *Doctor of Social Science*, or the *Doctor of Science* degree should be introduced for personnel in mid-career or older who, after considerable university experience or careers in research institutions or government or industry, wish to return to the university to accomplish a written work for higher research merit certification. The degree would be granted in recognition of the satisfaction of the following requirements:

a. a departmental oral, testing the candidate's command of his field at a level suitable to his mature experience;

b. completion and acceptance of a major piece of research;

c. a university oral defense of his research.

The institution of this degree would have the following salutary effects:

a. It would be a prestigious symbol of academic and intellectual achievement awarded not on an honorary basis but for achievement. As such, it would encourage the continuation of creative research and writing even after the scholar has achieved professorial or high professional status.

b. It would tend to decrease the emphasis on "perish" in the "publish or perish" syndrome by providing an alternative to continual publishing as a means of obtaining academic recognition. In other words, it would, to some degree, disentangle publishing and academic advancement, particularly in second rank institutions or below, by providing an alternate symbol of recognition and thus encouraging those institutions to lay greater emphasis on teaching for advancement. Recognition of merit rather than mere survival would become a spur to continued intellectual creativity.

c. It would open up the university degree structure to career men in non-academic institutions who in mid-career are prepared to make a significant intellectual contribution but who at present have no avenue or real incentive open to them except 1) entry into Ph.D. programs where they must compete with men considerably younger than they are, or 2) a year "off" at some academic institution, where the lack of merit recognition does not encourage them to make the contributions of which they are often capable.

Inquiry should be made to determine whether it might be possible to seek preliminary experimental foundation support for a small but highly selected number of men in this category.

This proposal would structure the degree system as follows:

First Year of Graduate Work

M.A. Ph.M. Ph.D. age group: 20–40

lateral entry

Doctor of Humanities
Doctor of Social Science
Doctor of Science
age group: over 40

The introduction of this new degree structure could provide the diversity and freedom now lacking in graduate work. It would maximize the efficient use of our resources and would, to a considerable degree, ease the psychic pain currently characteristic of much of the academic community and younger faculty. Stanford University, because of its prestige, is in a preferred position to adopt this system unilaterally and to recommend it to the American academic community at large.

The Structure of Graduate Education

For the historical reasons cited earlier in this paper, the present malaise of American graduate education may be described in the following terms: scientism has led to the victory of training over learning as preparation for careers in education, research, government, industry, etc., where the sophistication and gentle humor born of wisdom and humility are so dangerously lacking in a society increasingly turning toward scientistic, mechanistic, and computerized solutions for its human problems and intellectual issues. The ritualistic performance of prescribed tasks for purposes of demonstrating adequate competence has replaced imagination, wonder, and daring as the prescriptive identification of those to whom we must inevitably entrust the education of our youth and the future of our society. Learning is measured in units taken, courses completed, grades achieved. Mechanisms have replaced freedom in graduate school, leading to stultification of the imagination and the mediocritization of the mind. To paraphrase one specialist's summary of Andrew West's criticism of graduate education, more people *endure* the doctoral discipline because it ensures entry, security, and upward mobility in the academic marketplace than *enjoy* it as an encounter with scholarship and learning for their own sake. Or to paraphrase another specialist's summary of Thorstein Veblen's criticism of the university contained in his *The Higher Education in America* (1918), in an effort to satisfy efficiency-minded governing boards and the demands of an increasingly technocratic civilization, universities have adopted all the paraphernalia of department stores. "Veblen found that a superficial structure of grades, units of work, and credits had arisen to measure the learning product turned out by the educational factory."

In short, learning has been diluted by degrees. In 1916 the prescient Andrew West of Princeton asked a question and issued a warning: "Isn't there a bit of danger in slavery to degrees, labels, titles, as well as to other mechanisms? The degree of Doctor of Philosophy and Master of Arts are valuable as servants, but not as masters, to the students." The language our students use betrays our failure to heed Dean West's warning. They "work toward the degree." They "fulfill requirements." They take "qualifying" examinations. They talk of stages of their education as "rites of passage" into a profession. The university encourages the pattern of thought exemplified by these expressions. Every doctoral dissertation is inscribed: "submitted to . . . in partial fulfillment of the requirements for the degree of Doctor of Philosophy."

Having worked toward the degree by taking a requisite number of units, fulfilling specified requirements, achieving a certain grade average, passing qualifying examinations, and writing an often turgid and crushingly boring dissertation that passes as an "original contribution to knowledge," the graduate student, his imagination probably restricted and dulled, his mind perhaps withered and exhausted, his soul jaded, dreamless, and unwondering, his enthusiasm gone with his youth, is suddenly transformed by the magic of a degree into an educator charged with the responsibility of imparting to those who come after him the excitement of learning and a sense of the adventure of ideas. Often he leads them no further than into the intricacies of the footnote.

If graduate school is ill, it is ill because it has become dysfunctional with regard to education. The mechanistic and unfree structure that is graduate school today produces a surfeit of petty souls incapable of generating the sense of perspective or excitement about the world that informs the work of the great scholar or the wise and learned man. No wonder so few professors command the respect and affection of their students! Those who survive graduate education undiminished and undepleted are heroic indeed. "The more the student is excited about and willing to work on noble human issues–whether these be in the arts or in the sciences–the more he is a human being." But how can the desiccated technician produced by the present structure of graduate education sell his students or his society the concept that the life of ideas and commitment is a noble one?

Having recognized the problem, Dean West pointed a way to its solution, and it is worth quoting his words at length because of their aptness:

> The first and most obvious suggestion [for the graduate school to stimulate more work for the advancement of science] is that we abandon as far as possible all unnecessary machinery in our graduate schools. We are treating vital energies of young men. We are endeavoring to discover their aptitudes, and release them, as soon as those aptitudes are discovered, for the freest development to the highest degree. Think of what it means to mechanize knowledge in the way of deadening the gifted individual's impulses in order to average him with men of less ability–for neither he nor they are to be averaged anyway. As a matter of experience all over the country in greater or less degree, varying from one university to another, and varying in the same university from time to time, it is the docile, mediocre fellow, the plodder, who is the one man whom it seems impossible to keep from a higher degree. . . . Why shouldn't the graduate student be free? Why should there be any fixed number of courses he must take? Why should he not study what he likes? Is there not enough in any important subject to exhaust a lifetime of the most ardent intellectual effort? Of course there is.

Because there is a sense in which great problems require bold solutions, and because the bolder the proposal the more lively the discussion and the more active the responses are likely to be, the following is suggested as a plan for the reformation of the present structure of graduate education at Stanford, based on these premises:

1. Just as an architect or an inventive engineer is different from a brick-layer or an electrician, so learning and scholarship are different from training. Our society is entering a period when the great graduate schools will have to assume the increasingly heavy responsibility of encouraging the development of great scientists with a humane perspective on their disciplines and work, of social scientists with a willingness to boldly prescribe, not merely describe, and of humanists who will constantly remind us of our foibles and fallibilities. These men must be more than craftsmen. Stanford has the capability of being a great graduate school, not just a training center.

2. Intellectual creativity and maturity are fostered in a less rather than a more structured environment. The graduate student must be considered a mature individual capable of preparing himself for a career. Creativity is not synonymous with productivity; the bureaucratization of learning may produce, but it is not necessarily productive of creativity. Freedom is.

3. Graduate students should be pushed to the limits of their abilities and imaginations, not the limits of their endurance.

4. Fewer graduate students of higher quality, rather than more graduate students of a quality described as "competent" will ultimately benefit both Stanford and the community.

5. "Sink or swim" should be an operative principle in graduate education. We do no one a service by producing the competent mediocrities that all too often emerge from our schools because they adequately carry out assigned tasks. One is not educated because one has satisfied requirements unless those requirements are carefully tailored to their purposes and are themselves educational.

6. Although it is impossible to do away with structure entirely, it must be recognized that structure itself has significance and meaning; it should be purposive with regard to graduate education rather than descriptive of the results.

I. Because each of the three great divisions of knowledge, and each discipline within each division, has its own intellectual structure and educational imperatives, and because in no field and in no way can learning be measured in units or time periods, the present structure of University-wide requirements for graduate students should be abolished, to be replaced by the following:

A. Graduate students will pay quarterly fees for the privilege of using the University's instructional and research facilities, these fees to be defined in accordance with the University's economic requirements.

B. Each graduate student will be required to present certain work in evidence of his progress, and a *reasonable* maximum time-limit will be imposed by each department or graduate committee on its students for completion of their work.

C. Grades, formal class attendance, and research tasks should be abolished for all graduate students, except those described above for each degree or those considered absolutely essential within each discipline. The latter could be determined in the following fashion: each department and graduate committee should be encouraged to prepare an examination of its own field of knowledge to determine the ***absolutely basic*** requirements for the development of scholarship and learned professional performance in its area of competence. The discussion would proceed along the following lines:

1. Attention should be paid only to the requirements of the field, without regard to such problems as University residence requirements.

2. A clear distinction should be made between the requirements for teaching and for research in each field, and two separate statements prepared.

3. The proposals of each individual department should be submitted to a graduate department visiting committee specifically appointed for that department, to be composed of faculty members in related fields or of particular intellectual competence, who would be capable of providing intellectual and procedural criticism and perspective on the intellectual structure of the field in question. The visiting committee's work would include an evaluation of the value of laboratory practice as opposed to classroom work and the relationship between the two should be clearly defined.

4. This procedure would provide each department with an objective perspective on its own work and at the same time would encourage the recognition of the increasingly interdisciplinary quality of much graduate work.

5. Such studies would lead to the definition of each department's requirements, within the structure described below.

II. The structure of instruction should be changed as follows:

A. The graduate student in any discipline should be held responsible for a body or level of knowledge in his discipline rather than for the fulfillment of course requirements other than those described or prescribed for his degree above. His knowledge and learning will be tested in examinations as described, but his acquisition of knowledge and learning should be his own responsibility to be gained as he sees fit. The University will provide facilities for this purpose but will not prescribe the way in which those facilities are to be used. Courses should be available for graduate students, but none should be required. The graduate student, with his tutor, will work out his own program as efficiently as possible.

B. At some point during the first year of graduate study, each student, in consultation with a departmental committee, should select a member of his department's staff as his graduate tutor (I suggest using this word to emphasize a closer and more instructional relationship than that described by the word "adviser").

C. The division of the year into quarters or semesters for purposes of graduate instruction should be abolished. Instead, the graduate academic year should begin on the same day that the fall quarter begins for undergraduates and end on the last day of the undergraduate spring quarter.

D. The length of courses offered to graduate students should be specified in terms of the requirements of the subjects being taught. Thus, instructors might offer courses of two week's duration or a full year. Such courses might be called "university courses" and would be open to anyone wishing to attend. No examinations or papers would be required of graduate students, and undergraduates could attend them for their own edification. Graduate students would be encouraged to attend such courses because of their value in furthering the students' education. Such a system would have the following advantages:

1. It would provide more freedom for the exercise of creativity on the part of the faculty.
2. Within the limits of funds, it would enable the University to expand its faculty offerings and the experience of its students by permitting invitations to leading scholars from other campuses to visit Stanford to lecture for a shorter or longer period of time on important subjects. Thus, a recognized leader in a field might be invited to give a University course of ten lectures in two weeks on a particular subject.
3. It would permit graduate students to work at their own speed, without being constantly harried by deadlines for papers, worry about grades, etc. A student's progress would be determined periodically by consultation with his tutor, who could suggest changes in the student's program as seemed necessary.
4. Within the competence of the faculty, graduate students could select the individuals under whom they wished to write papers. The faculty member would be available for guidance in methods and bibliography, and the student would prepare and turn in a paper for evaluation whenever he felt ready to do so.

E. Students able to persuade particular faculty members at other universities to advise them on a specific project and to write an evaluation of the results for Stanford should be permitted to offer such work in satisfaction of the requirements defined under the schedule of degrees. If other universities could be persuaded to do the same, it would effectively broaden the intellectual universe of the graduate student. Basic control over the quality of our own students would be maintained by the requirement that oral examinations and parallel evaluation of work accomplished under faculty members at other universities be executed at Stanford. The student might be required to obtain permission for such a program from his department and the graduate dean.

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A program and structure of graduate studies such as outlined in this paper would, I believe, encourage those qualities of mind in our scientists and educators which are required if the life of ideas is to survive in the future and if the dignity of the intellectual endeavor is to continue to attract the most creative and adventurous minds in our society.

Appendix 5 **Committee on the Graduate Division Proposal on Ph.D. Candidates' Tuition**

To: Provost's Staff

From: Virgil K. Whitaker, Dean, Graduate Division

Subject: Tuition for Ph.D. Candidates

The Policy Subcommittee of the Committee on the Graduate Division is recommending that we adopt substantially the tuition scheme for Ph.D. candidates proposed in the spring of 1966. This action has been taken after careful consideration of the objections to the original proposal made by a variety of departments. Since the departments were almost evenly divided in their reaction, some statement of the Subcommittee's reason for once again making the recommendation is obviously in order.

There is no disagreement whatever among deans and departments that the present system of double jeopardy is bad. It is not only embarrassing but also ridiculous that a student who has fulfilled all requirements set by the department and the University for completion of the Ph.D. should find himself obliged to pay an additional sum of tuition as a condition for receiving the degree. This tuition deficiency arises from the practice of counting the residence requirement in terms of three years' tuition, and it seems to discriminate against the students who are in fact most deserving–namely, those who spend a considerable proportion of their graduate career in the status of teaching and research assistants and who finish their work for the degree in the shortest reasonable time.

Any attempt to devise a better tuition structure must take into account several problems. First, the cost of training a Ph.D. involves far more than the expenses of offering courses or seminars or even individual instruction, such as investments in laboratories, libraries, computer services, and so on.

Second, a fee structure, to be equitable, should involve some relationship between tuition charges and the time actually spent in graduate work.

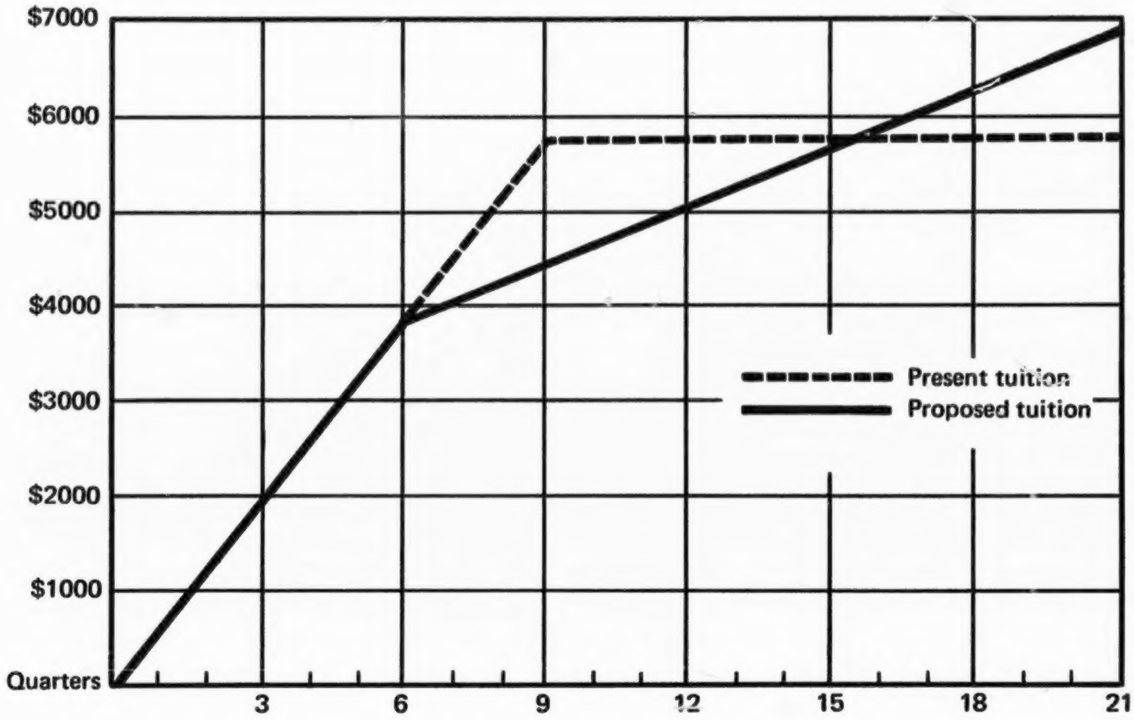
Third, particularly in these times of financial stringency it may be inadvisable to take an action that simply reduces the tuition paid to the University. In other words, any action that cuts the formal residence requirement should probably involve some compensating source of revenue.

Finally, every educational consideration indicates that Ph.D. candidates should complete their dissertations before accepting academic appointments or other positions. Graduate students who have not yet completed their dissertations can now command instructorships or, in many areas and institutions, even assistant professorships. Many of them can also find attractive opportunities in government and industry. All these present strong attractions to the candidates to go out and accept positions before finishing their dissertations. Ideally, a tuition structure should provide both a positive incentive for the candidate to remain on the campus and a continuing reminder that he should finish his dissertation if he does leave to accept a position. To the maximum extent possible, tuition for those in residence at Stanford will continue to be provided by fellowships or grants accompanying assistantships. Candidates who have accepted employment will be expected to pay their own tuition.

The graph on page 76 indicates the relationship between present and proposed tuition charges in terms of time spent upon graduate work in full-time quarters. The charges will be reduced for candidates who take five years or less to obtain the Ph.D.

For all these reasons, the Subcommittee, even though the membership is completely different from those who developed the scheme proposed two years ago, has worked its way back to very nearly the same proposal. It has taken into account objections offered by the departments, as well as their suggestions. The revised proposal is attached.

April 4, 1968



Revised Proposal on Graduate Tuition Fees

The Policy Subcommittee of the Graduate Division Committee recommends adoption of the following policy and practice in the charging of tuition for students engaged in graduate study toward the Ph.D. degree:

1. The minimum residence requirement for the Ph.D. degree will be defined as six full quarters (or the equivalent in part-time registration as calculated by tuition charges), of which three may be fulfilled by graduate work taken at another university.

2. Candidates for the Ph.D. degree who have earned an advanced degree requiring two or more years of course work at Stanford (M.B.A., Ed.D., Engineer, etc.) will complete a minimum of three additional quarters of residence (or the equivalent in part-time registration as calculated by tuition charges).

3. After completion of all residence and course requirements, a doctoral candidate will register for dissertation preparation by paying a Dissertation Tuition fee of $200 per quarter for a minimum of three quarters, unless he has already paid tuition for three years because of a previous two-year degree as stipulated in the preceding paragraph.

4. Every doctoral candidate must be enrolled in each of the three quarters of the academic year, independently of whether he is formally in residence at Stanford or not. An exception will be made for students who are absent from the University as a part of a formal departmental requirement for all students in a particular doctoral program. Those involved in temporary national service obligations will of course be exempt. On recommendation of the department chairman, the Dean of the Graduate Division may waive the provisions of this section for compelling reasons. Otherwise, failure to complete Dissertation Registration will result in lapsing of candidacy for the Ph.D. degree, which may be reinstated only after payment of fees for all quarters missed.

5. During summer quarter, doctoral students, if not otherwise registered, may register under a special summer residence fee set to cover the costs of the services provided. Such a fee will not entitle students to enroll in summer quarter courses.

6. Candidacy for the Ph.D. degree is limited to a period of seven calendar years from the student's initial Stanford graduate registration less a time, not to exceed one year, equivalent to time spent in graduate study at another university.

7. After expiration, candidacy may be renewed on a yearly basis on recommendation of the department concerned.

8. Students on Dissertation Tuition registration may (upon petition to the Graduate Dean) register for up to five units of course work in any given quarter.

Policy Subcommittee of the Graduate Division

Wolfgang Panofsky, *Chairman*
Moffatt Hancock
James E. Howell
Lewis W. Spitz

March 26, 1968

Appendix 6 Report on Graduate Admissions & Awards of the Topic Committee on Admissions & Financial Aid

The Subcommittee on Graduate Admissions and Financial Support has met a few times, bringing together experience from most of the professional schools and many corners of Humanities and Sciences. In the course of these discussions, several themes worthy of note emerged.

Predicting who will be a successful graduate student is perceived as a rather difficult task and is approached in different ways in different parts of the University, probably for good reasons. Graduate departments which represent cognate undergraduate fields are in a position to put a good deal of weight on recommendations of advisers. This option is much less available to professional schools, such as Law and Medicine, where the recommender does not belong to the profession or field of the Admissions Committee members, but rather is a teacher of English, chemistry, etc. How best to weight academic transcripts and aptitude tests has occasionally come under systematic study, where regression methods, etc. have been used. No strong advantage from the use of such methods appears to arise at the graduate level. Repeatedly those admissions which were considered most usually to involve difficulties were admissions of foreign students, particularly from non-English speaking backgrounds, and applicants from little-known undergraduate institutions.

The standards on which financial support are given are quite varied in different parts of the University, but probably for good reasons. First, Masters students (where there are such programs) rarely receive financial support from the University or sources controlled by the University.* Second, financial need for students is an essential requirement for support in professional schools, such as Business, Law, and Medicine. But financial need is almost irrelevant to the support decision in Ph.D. programs in the departments of Engineering and Humanities and Sciences. There are at least two reasons which go far to account for the fact that even though a graduate student may have independent means, he is likely to be given financial aid through a research assistantship, fellowship, or teaching assistantship. First, the competition for the ablest graduate students is quite keen among the leading departments in any particular field, and any department is loath to pass up the opportunity to bring in a particularly able student by allowing some other university to pay him a stipend—that is, the general practice in pursuing the search for quality in incoming graduate students is conducted under "rules," across the country, which preclude the withholding of stipends on financial grounds. The second factor is that most national fellowships, such as NASA, NIH, etc. do not call for any showing of financial need, so that a considerable share of student support is naturally given out without any reference to the matter at all.

There appears to be awareness of desirability of keeping levels of graduate support from varying too much. Where grant and contract support is an important ingredient, as is the case in science, we even find agreements among closely related entities (e.g., SLAC, Physics, and Hansen Labs) setting maxima for research assistant stipends. It is probably true that the financial side of student support is more nearly standard than the other conditions of graduate student support—in particular, the amount of time demanded of the student. A research assistantship covering 50 percent time and 9 units of tuition will involve more than 20 hours per week routinely in certain parts of the University and be "nominal" in other parts, with the entire range between being found in one place or another. Similarly, the duties of a teaching assistant will vary quite widely over different parts of the University. We have studied a set of questionnaires coming from more than 20 departments, describing duties of assistants; we find the variability large in kinds and amounts of duties and the results almost impossible to summarize. Perhaps the single most adverse consequence of this variability in work loads is the possible development of dissatisfaction among the graduate students. It is especially important that intra-departmental variability be not large. Several departments (e.g., Mathematics, Psychology, Biology) are moving toward requiring teaching, not necessarily for additional compensation, by all

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*with some exceptions, e.g., in Engineering and Education

Ph.D. students at some time during their graduate careers. This appears to be part of an emerging effort to spread the work and to reduce the specialization of certain students as teaching assistants, others as fellowship holders, etc. One advantage of such provisions is tax exemption on stipends. Uniformity of duties and compensation should be aimed at, *within* each department. We do not believe trans-departmental standards or practices could be established with good likelihood of success.

Tentative Recommendations

The mode of admission to graduate study in departments varies: sometimes it is done by the department sitting as a group, sometimes by a committee, sometimes by individual professors, sometimes by the executive head. But no matter what the mode, admission to a department involves a corporate departmental responsibility to the student. To promote effective implementation of that responsibility, *we recommend that each department prepare a written policy on graduate admissions.* Such a policy should specify the department's mind on at least the following:

1. How many admissions per year are enough? How many are too many?
2. What are the criteria for admission where the number of qualified applicants exceeds the number to be admitted?
3. Who is authorized to make the decisions?
4. What relation is intended between admission and financial support?

The admission of foreign students poses so many problems that there is a constant temptation to cut the problem off by not admitting foreign students, and indeed the Medical School, as a way of solving these problems, has restricted the admission of foreign students to those who have had at least one year in an English-speaking school; among other things, this gives the school a better chance to evaluate credentials. Although the training of foreign graduate students entails some special inconvenience, we feel the task is important and useful. A graduate student who is well trained and who returns to his home country enables training to proceed there; in time such products of Stanford and other universities will lead to more economical and large-scale training in the countries of origin. *To facilitate successful selection of foreign graduate students, we recommend*:

1. That in those parts of the world where the interviewing of applicants can be arranged through agencies, such as the IIE or the AAI, these opportunities be systematically used. To facilitate such use, there should be put out to all departments a summary of available services for appraisal and interviewing of foreign students. These include: IIE overseas offices in Africa, Latin America, and Southeast Asia, by the American-Korean Educational Founcation, the American Friends of the Middle East, the U.S. Educational Foundation in India and Ceylon. Such a summary should include names, addresses, services offered, fees charged, and necessary lead times.
2. That in each department there be one faculty member who for a period of several years handles all foreign graduate applications and perhaps serves as their adviser during their first year.
3. That students already enrolled from foreign countries be regarded as valuable resource people in evaluating credentials from the country of their origin.
4. That records of foreign students who have been admitted to any department of the University be readily identifiable and accessible. Where a particular department is wondering what a first-class honors degree in the University of Madras means, he should be able to readily identify which students at Stanford in recent times have been admitted from that university and how they have fared. Perhaps the most important recommendation would regard this service as an extension and systematization of the clearing house function of the foreign admissions office, although the record-keeping itself might be done on data processing equipment.

With respect to the difficult problem of evaluating credentials of applicants who come from little-known colleges, *we recommend that records be so kept that it will be easy to ascertain which students have been admitted in any graduate program in the University from any given college*. This will permit comparing credentials, transcripts, etc., which will help greatly on the admission decision.

To facilitate the valid appraisal of such indices of graduate training productivity as average completion time, drop-out rates, time to completion of orals, etc., *we recommend that a central record file be established* so that for each graduate student admitted to a department, it is possible at any subsequent time readily to ascertain whether he is still enrolled or has terminated his connection with Stanford, whether he has been admitted to candidacy for the Ph.D., whether he has completed his qualifying examinations in the department, etc. At the present time such records are kept by Miss McIntosh for students who have filed application for candidacy, but the file, probably automated, should comprehend all enrolled graduate students.

To promote intra-departmental uniformity of duties and compensation *we recommend that every department establish a policy* relating to these matters. The policy, after review at the School level, should be publicized and should be applied in a uniform manner; changes in the policy could be made–in the same manner–as needed. Such a policy should:

1. State the intended balance among the objectives of paying compensation. These include: accomplishing departmental work, furthering the training of the student, freeing him from the need to seek non-professional employment.

2. State the extent of intended connection between duties and pay, including maximum and minimum intended hourly workloads.

3. State devices for monitoring application of the policy and for hearing grievances.

In our study we have not considered University policy governing the allocation of funds of the Ph.D. Improvement Program and University General Funds toward graduate student support. We do not yet know what the basis for the distribution of funds to various departments and schools is; we assume that it almost surely deserves conscious self-study both within and among schools.

A second problem which has concerned us, but which we have not thoroughly studied, is the matter of paying dependency allowances. In parts of the University where graduate students are typically young and few have dependents this is not a major problem. Their ordinary departmental resources, such as supplementary allocations from fellowship funds or assignment of traineeships carrying dependency allowances, pretty well meet the issue. In other parts of the University the problem is quite acute; for example, in the School of Education doctoral students often attend on an intermittent basis over a period of years because of their dependency situation. In the School of Medicine very large debts are often built up from this cause. It then follows that the choice of post-doctoral appointment is all too frequently determined on financial grounds. There are good reasons for not allowing the financial burdens of family to distort the progress of graduate training or postdoctoral training. At the same time the potential costs for allaying these problems are high. We are unable to estimate costs. We do believe that the issue should be studied and are certain that to the degree the University can, it should encourage growth of federal loan programs with "forgiveness clauses" and should participate in such existing programs as heavily as possible.

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Norton Batkin
John D. Black
J. Merrill Carlsmith
Bernard P. Cohen

Lincoln E. Moses
John L. Mothershead
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Michael M. Roberts
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Appendix 7 Education of Women at Stanford University

by Alberta E. Siegel, Associate Professor of Psychology
in collaboration with Ronald G. Carr

Sex differentials in education at Stanford University, one of the focal topics of concern in the current Study of Education at Stanford, must be viewed in the light of some knowledge about the history and present status of American education and about the past and present roles of American men and women. We present the briefest possible summary of these topics to provide a background for our discussion of education of women at Stanford.

History of higher education of American women

National history. In 1841, four young ladies received B.A. degrees from Oberlin College. This was the first instance of American women having attained baccalaureate degrees equivalent to those granted men. Baccalaureate degrees had been awarded to men in the United States since Harvard College opened its doors in 1636.

Several women's colleges were founded before the Civil War, but it was not until after that war that the move for higher education of women gained momentum. More women's colleges were established, and various state universities became coeducational. One reason was that public schools were proliferating during this period, and educated women were needed to staff them as teachers.

The number of students enrolled in institutions of higher education has increased from decade to decade for the past century, and so has the proportion of the relevant age group which is enrolled.

But the percentage of all college students in degree programs who are women has shown a different course. By 1870, this figure was 21 percent. Fifty years later, in 1920, the figure was 47 percent. That was the high. The figure had declined by the end of the next decade to 44 percent and to 40 percent by 1940. With the influx of male veterans on the G.I. Bill after World War II, the proportion of women among college students in 1950 fell to 30 percent. After that year the figure started rising again, but it has not returned to the former highs. In 1966, it was 40 percent.

A second trend concerns the balance among institutions which are coeducational and those which educate men only or women only. Of all institutions of higher education in the United States in 1870, fewer than one-third (29 percent) were coeducational. The majority (59 percent) were open to men only, and the others (12 percent) were open to women only. Over the intervening years, the proportion of institutions that are coeducational has risen steadily. By 1957, they comprised three-quarters of the total, with only 13 percent open to men only and another 13 percent open to women only. Approximately half of the women's colleges that remain today are Catholic colleges, and the men's institutions are largely Catholic colleges or technical institutes.

A third trend concerns the sorts of institutions in which women enrolled. In 1870, the majority of college women (59 percent) were in women's colleges. This figure fell to 19 percent in 1920, and by 1965 only a tiny minority of women students, 5 percent, were in women's colleges.

History of enrollment of women at Stanford. Carr has studied trends in enrollment of women at Stanford. Our university has been coeducational since its founding in 1891, during a period when nationally the trend toward coeducation was strong. The ratio of men to women was initially 3 to 1, but soon fell so rapidly that University leaders, including Mrs. Stanford, became concerned and decided to impose a limit of 500 on the number of women students. Although the enrollment of women in the first three decades of the present century was not held strictly to that limit, contrary to a popular local myth, it was indeed severely curtailed, so that by 1930 the ratio had risen to 5 to 1. In 1933, the Trustees voted to abolish the limitation, primarily because the number of men attending the

University was decreasing as the effects of the economic depression were being felt, and their decreased enrollment was adversely affecting the University's financial status. By 1940, the ratio had fallen to 2 to 1, and during the war years women constituted the majority of students on campus. With the return of men to the campus after the war, the ratio rose again in the late 1940's.

Because the proportion of men among graduate students is much higher than the proportion of men among undergraduates, the overall ratio at Stanford is affected by the balance of undergraduates and graduates on campus. Of undergraduate students only, the ratio of men to women has never risen higher than 2.4 to 1 during the postwar era. That was the ratio in 1948, and it was the ratio in 1966. There were declines and fluctuations in the intervening years. Of all students, both graduate and undergraduate, the ratio was 3 to 1 in 1948 and 3.3 to 1 in 1966.

Education and marriage. At the turn of the century, when higher education of women was still controversial, many women graduates never married. In the early 1920's, a study was conducted of Mt. Holyoke alumnae, showing that only 48 percent of the graduates in 1884–1893 had subsequently married, and only 52 percent of those in 1894–1913. Those who had married had produced an average of only two children. Observation of such facts in the early part of the century led to an almost hysterical debate about the advisability of educating women. That debate is in the past, for now it is patently obvious that most college women are marrying and are having enough children to make their own mighty contribution to the population explosion. This has been true for at least a generation. Thus, eight years after graduation, 100 percent of the class of 1945 at Sweet Briar were married, and they already had two children each.

Vassar alumnae have been studied by Mabel Newcomer, who was Professor of Economics there after studying at Stanford. Of those who graduated in the latter years of the nineteenth century, about 55 percent eventually married. The figure rose to 61 percent for graduates of 1902–1911, and to 75 percent for graduates of the following decade. The proportion of women graduates who eventually married continued to rise, and now marriage is almost universal for Vassar alumnae. At the same time, the age at which they marry has declined. The median age of marriage for those Vassar alumnae of the first forty years of the college's existence who married was between 27 and 28. This had dropped to 24 by the 1930's, and today is around 22.

Current trends in the education of American women

College enrollment: national trends. American girls constitute the majority of graduates of secondary schools, and this has been the case for nearly a century. (The high school "dropout" is much more likely to be a boy than a girl.) Girls earn slightly better grades in high school and do slightly better on standardized achievement tests.

Yet girls are significantly less likely to go to college, and those who do may be sent to less expensive colleges, nearer home, than those in which their brothers are enrolled. Currently, women constitute about 43 percent of all college entrants nationally. Of the June 1963 graduates from high school, 63 percent of the men but only 44 percent of the women were enrolled in college the following October.

In college, women tend to study qualitative fields like literature, languages, history, and the social sciences, while their male contemporaries concentrate on science, business, and engineering, and on preparation for law and medicine.

For those students who do enter college, attrition over the succeeding four years is only slightly higher for women students than for men. Around the country, about 60 percent of the men who enter college remain to receive the baccalaureate degree, and about 50 percent of the women. Retention rates are higher for the more selective institutions.

Because fewer women than men go to college, those women who do enroll are more "selected," in terms of ability, achievement, and motivation. Therefore it is not surprising that when college women do leave school, in contrast with college men, it is more often for personal reasons than because of college failure. An opportunity to make a desired marriage is a frequent reason, but others are newly discovered lack of motivation to achieve in college or a desire to take an attractive job. Some careful studies have shown that although women drop out of college at the same rate as men, this is not true when income and aptitude are held constant. A girl of a given family income or personal level of ability is slightly more likely to drop out than a comparable man.

Enrollment of undergraduate women at Stanford. In the autumn quarter 1967, there were 5,923 undergraduates at Stanford, of whom 1,790 were women. O'Gara has studied the enrollment of these students by major, showing that there are impressive differences in the majors chosen by men and women students.

In the first place, more women than men are uncommitted. The General Studies major is a catch-all for students who have not committed themselves to a major subject. It was chosen by 45 percent of all undergraduate women, and only 33 percent of the men.

Second, for those who are committed, the tendency is for a few majors to draw most of the students. Thus, of all the Stanford women who had declared majors, over half were in but four fields: English (19 percent), history (13 percent), psychology (12 percent), or one of the modern European languages (8 percent). Over half the men with declared majors were in but four fields too. However, they were not the same four fields: engineering (22 percent), history (13 percent), political science (12 percent), and economics (9 percent).

Another way to look at the enrollment data is to consider the total number of undergraduates enrolled in any one major, and then to examine the proportion who are women and the proportion who are men. Such an examination reveals that certain majors at Stanford are attractive mostly to women whereas others are attractive mostly to men. Thus, in statistics 100 percent of the majors are men. In engineering, 99 percent are men. The figure is 96 percent for physics, 93 percent for architecture, 92 percent for all the earth sciences, and 91 percent for economics.

Since men are so much more numerous than women among undergraduates with declared majors, it is rare to find a major drawing the preponderance of its enrollment from women. But there are a few. All of the nursing majors are women, and so are the great majority of majors in physical therapy and in speech pathology and audiology. Women comprise the majority of majors in modern European languages (58 percent), Asian languages (54 percent), art (71 percent), music (57 percent), speech and drama (53 percent), and anthropology (58 percent). In all other major fields at Stanford, women are a minority.

O'Gara compared enrollments by sex for the years 1957, 1962, and 1967. The interested reader is referred to her paper. Comparisons across the years are difficult, because the University's offerings change from time to time. Nonetheless, the stability of enrollment trends over time is impressive. Only two major changes were noted in the ten years: engineering was a much more popular major for men in 1957 than in 1967, and the single most popular major for women in 1957, education, was no longer available as a major to any undergraduate in 1967.

Until very recently, enrollment of undergraduate women at Stanford has been tied to the availability of on-campus housing for them. In 1967, there were 1,663 places for women in dormitories on campus and at the overseas campuses. With the new housing policies on campus, it is no longer necessary to link enrollment of women so closely to availability of dormitory facilities, and indeed the definition of a women's dormitory is becoming blurred.

Graduate enrollment: national trends. Americans value education, and our economy demands educated workers. The trend is to encourage American young people to remain in school as long as they can benefit from it.

Over the past century, the number of years Americans spend in schooling has increased on the average from decade to decade. At present, the most dramatic growth in enrollments is occurring at the post-baccalaureate level–in graduate and professional schools.

Attrition in educational enrollment tends to occur at nodal points: completion of grade school, high school graduation, college graduation, completion of an advanced degree. Each such point is experienced by the student as a decision juncture, when he must make fresh arrangements in his life, either to continue his education or to turn his energies elsewhere.

Data on attrition in enrollment are difficult to obtain and to interpret, because of the geographical mobility of American students–they frequently move from one educational setting to another without in fact interrupting the progress of their educational careers–and because of the frequency with which a student leaves school for a time and then re-mounts the educational ladder. Further, a number of years must elapse between the time a student enters a particular educational pathway and the time we can say whether he pursued that pathway to its goal. So data on attrition are available primarily for students who entered college in the 1950's. We must have doubts about the applicability of these findings to present-day students, whose educational decisions are so deeply affected by the war in Vietnam, the national policy on military service, and the increasing emphasis on, and opportunity for, graduate and professional education.

With due recognition of the complexities of the data on attrition at the nodal point of college graduation, we may say that it is clear that attrition is much greater for women than for men at this point. Only about half as many women college graduates launch work toward an advanced degree. Further, they are more likely to drop out of graduate study than men are. One summary of the studies on this topic concludes that "women with B.A.'s are less than half as likely as men to earn a graduate degree, despite the fact that they have better undergraduate records on the average."

As was the case with undergraduate enrollments, women comprised a larger proportion of the graduate student bodies in 1920 than they do today. There were no women attempting to obtain the doctorate in 1870. By 1920, women comprised 15 percent of that total. But in 1964 the figure was 11 percent.

The fields of specialization women choose in graduate study are different from those chosen by men. About half the women earn their graduate degrees in education. Other graduate fields commonly chosen by women are social service, home economics, some of the social sciences, languages. Chemistry is the favored field among the sciences, and women are also drawn to the sciences that undergird medicine: biochemistry, pharmacology, etc.

Enrollment of women graduate students at Stanford. There are slightly more graduate men than undergraduate men at Stanford. On the other hand, there are fewer than half as many graduate women as undergraduate women. Thus, while women comprise about 30 percent of the undergraduate enrollment, they comprise but 15 percent of the graduate enrollment. As Jewell shows in her study of graduate enrollments at Stanford in the past ten years, women have constituted roughly that proportion of graduate students throughout that period.

Of all the graduate women at Stanford, a third (35 percent) are in the School of Education. The next most popular field of graduate study for women is the modern European languages, attracting 9 percent of the total. Another 6 percent are in art, music, or speech and drama. Together these fields account for one-half the graduate women students.

The fields accounting for one-half of the graduate men students at Stanford are very different. The single most popular field is engineering, with 32 percent of all men graduate students. Next are business with 12 percent, law with 9 percent, and medicine with 6 percent. Together these fields account for 60 percent of the graduate men students.

There are many fields of graduate study at Stanford that are essentially masculine. Thus, 100 percent of the graduate students in geophysics, hydrology, mineral engineering, petroleum engineering, food research, and applied physics are men. And 99 percent of the graduate students in engineering, business, physics, and physical sciences are men. Men comprise 95 percent of the graduate enrollees in law and in mathematics. Fields in which between 90 percent and 94 percent of the graduate students are men include medicine, chemistry, geology.

There are no comparable, essentially feminine, graduate majors. In fact, the only graduate majors in which even the majority of the students are women are linguistics, the modern European languages, physical therapy, and speech pathology and audiology. All are relatively small programs. Women comprise just under half of the total graduate enrollment in education, 49 percent. In all other fields, women are in the minority among graduate students. In some cases, they are an insignificant minority while in other fields their representation is substantial: 44 percent in art, 38 percent in music, 33 percent in speech and drama, 40 percent in anthropology, 37 percent in English, 28 percent in psychology, 25 percent in communications.

Jewell studied trends in graduate enrollments at Stanford over the years from 1957 to 1967. The total graduate enrollment increased only modestly during the period, from 4,044 to 5,539. Most fields shared in that modest growth, and the ratio of men to women remained essentially constant over the period. A few fields, however, have grown very rapidly during the period, notably engineering (where graduate enrollment has doubled and the ratio of men to women has held steady at 99-to-1), computer science (a graduate major that did not exist in 1957 but that had 89 students in 1967, 9 of them women), and applied physics (a new field, which enrolls 57 men and no women in its graduate program). The most marked decline in graduate enrollment has been in education, from 888 to 589. It may be noted that this is the single most attractive major for graduate women, both at Stanford and nationally.

Scholarly careers for women. A detailed and fascinating study of "academic women" has recently been prepared by Bernard, a sociologist. She shows that those hardy souls among women who complete a long education for a scholarly career: a) usually marry and have children; b) usually are employed in positions in which their principal responsibilities are in teaching rather than in research; c) are most commonly found on the faculties of junior colleges, four-year public institutions (including teachers' colleges), and liberal arts colleges, and are infrequently found on the faculties of universities, especially those of high prestige; d) tend to cluster in a few fields of study–education, home economics, physical education for women, nursing, social service. She presents convincing evidence that this picture has emerged because of the preferences of the women scholars, including their placid willingness to fill the social roles available to them and their earnest wish to articulate their careers with those of their husbands. She argues that there is no evidence for any "discrimination against women" by the major universities.

Women on the faculty at Stanford. This study made us curious to examine the role of women on the faculty at Stanford.

A definition of "the faculty" at this University is not easy to reach, and our findings about the participation of women on the Stanford faculty differ depending on which definition is used.

A conservative definition would restrict the faculty to individuals holding the rank of professor, associate professor, and assistant professor. Fried listed these individuals, working from the 1967 Faculty/Staff *Directory*. She included individuals with the term "visiting" or "acting" in their titles, and also permanent faculty members at the overseas campuses. Not included were individuals with the term "clinical" in their titles, nor those whose title is "by courtesy." By this definition, there are 1,043 persons with faculty status at Stanford. Of these, 49 are women, or less than 5 percent.

Thus, while women comprise 30 percent of the undergraduates at Stanford, and 15 percent of the graduate students, they comprise but 5 percent of the faculty members at the various professorial ranks.

The majority of these faculty women, 31 of the 49, are placed at the lowest of the three ranks–assistant professor. Women comprise nearly 10 percent of Stanford's assistant professors, but less than 2 percent of the professors.

The Professorial Faculty at Stanford

Rank	*Men*		*Women*	
	Number	*Percent*	*Number*	*Percent*
Professor	490	98.4	8	1.6
Associate professor	215	95.5	10	4.5
Assistant professor	289	90.3	31	9.7

It may be noted that two of the eight women holding professor rank at the time of Fried's study became emeritus at Stanford in June 1968.

An inclusive definition of "the faculty" would encompass not only those in the professorial ranks but also senior research associates, research associates, lecturers, and instructors. Fried examined this group, again including those with "acting" and "visiting" appointments and excluding those whose appointments are "clinical" or "by courtesy." There are 1,725 individuals on the faculty under this expanded definition. Women are much more frequently found in the non-professorial appointments.

The Non-Professorial Faculty at Stanford

Rank	*Men*		*Women*	
	Number	*Percent*	*Number*	*Percent*
Senior research associate	13	86.7	2	13.3
Research associate	216	76.6	66	23.4
Lecturer	89	74.8	30	25.2
Instructor	98	69.5	43	30.5

As is the case with the various professorial ranks, women tend to be appointed more commonly at the lower ranks of the non-professorial faculty: they comprise 13 percent of the senior research associates but 30 percent of the instructors.

Another way to examine Fried's data from the 1967–68 *Directory* is to compare the percentage distribution of faculty men at the various ranks with the percentage distribution of women at these ranks.

Percent of Stanford Faculty Members at Various Ranks

Rank	*Men*	*Women*
Professor emeritus	0.7	2.9
Associate professor emeritus	0.1	1.0
Assistant professor emeritus	–	2.9
Instructor emeritus	0.1	1.0
Lecturer emeritus	0.2	–
Professor	34.3	3.9
Associate professor	15.0	4.8
Assistant professor	20.2	15.0
Senior research associate	0.9	1.0
Research associate	15.1	32.0
Lecturer	6.2	14.5
Instructor	6.9	20.9

The contrasts are dramatic. One-half of the men on the Stanford faculty are professors or associate professors, but fewer than one-tenth of the women are at those high ranks. Women are typically research associates, instructors, and lecturers (67 percent of all women hold such appointments) while men are less often appointed at those ranks (28 percent of the total). Only 1 percent of the men are now emeritus, while nearly 8 percent of the women are. We do not know whether this last contrast reflects simply the greater longevity of women or whether it also implies that there were proportionally more women on the Stanford faculty in days past than there are at present.

In summary, women comprise a small minority of the Stanford faculty. Most hold appointments at the lower ranks, at which tenure is not often available.

Several possible explanations for the disparity between Stanford faculty appointments for men and women may be considered. The first is that Stanford faculty women are younger than their male colleagues, and for this reason are clustered at the more junior ranks. We have not dared to inquire about ladies' ages, but we have examined the data on the emeritus faculty, and these data would suggest that youthfulness does not account for the low ranks women hold at Stanford. There are 125 emeriti listed in the 1967 *Directory*, and of these 16 are women. Ninety-three percent of the men are professor emeritus, but only 38 percent of the women are at that top rank. Although women comprise but 13 percent of all emeriti, they comprise 55 percent of those emeriti who were retired at below professorial rank.

Another explanation that occurred to us centered on the marital status of the women faculty members. There are difficulties in employing married women, and most highly educated women today are married. These difficulties probably account in good part for the clustering of women at the low ranks, but our data are not conclusive on the point. In the first place, many married women, especially those with children, wish to work only part-time. Any part-time faculty member is much more likely to be an instructor, a lecturer, or a research associate than to hold a professorial appointment at any level. Second, many of the professionally educated women in the Stanford community are wives of Stanford faculty men. One need only scan the Faculty/Staff *Directory* to observe many instances of married couples, both husband and wife employed by Stanford. There is a widely held belief, often so firm that it amounts to a policy, that it is inappropriate for a man and his wife both to hold faculty appointments at the same institution, the more so if they are in the same field of inquiry. Professionally educated women often were introduced to their husbands in graduate school or at work, so it is common for them to be married to men in the same field. Usually the couple was recruited to Stanford because of an opening in the husband's specialty; there may not have been any comparable opportunity here for the wife, and her appointment as a member of a research staff or as a non-tenured instructor may represent all that was available here to her. Hence, many instances may be found of a husband who is a professor at Stanford and his wife who is a research associate, lecturer, or instructor in the same field. Third, we must note that the married woman scholar does not receive offers of appointments at other institutions, because her colleagues in her field know that she is "not moveable," and this fact robs her of the leverage which other faculty members ordinarily are able to use in obtaining raises in rank and salary.

These three considerations, which combine to make it seem likely that marital status accounts for low academic rank, made us curious to discover whether single women predominate at the upper faculty ranks while married women predominate at the lower ones. The only information we could readily obtain was whether or not a name entry in the *Directory* was accompanied by an asterisk. That symbol means the individual is married, although it also "includes women addressed as Mrs." Thus, widows and divorcees as well as currently married women are identified by the asterisk, and this convention limits the pertinence of the data to the three considerations sketched above.

There are 116 who are married among the faculty women, and 90 who are single. The majority of the emeriti are married, and this is true of the professors as well. Beyond these facts, there is no clear trend for marriage to be notably more typical at one rank than at another. In fact, single women are preponderant among the instructors, doubtless because many in this rank are still quite young. The hypothesis that a woman's marital status accounts for her rank at Stanford is not substantiated by the data.

Marital Status of Faculty Women at Stanford

	Married		*Single*	
	Number	*Percent*	*Number*	*Percent*
Professor emeritus	4	66	2	33
Associate professor emeritus	1	50	1	50
Assistant professor emeritus	4	66	2	33
Instructor emeritus	2	100	0	0
Professor	5	62	3	38
Associate professor	4	40	6	60
Assistant professor	14	45	17	55
Senior research associate	2	100	0	0
Research associate	42	64	24	36
Lecturer	21	70	9	30
Instructor	17	40	26	60

If we knew the ages as well as the marital status of the faculty women, a clearer picture might emerge. It seems likely that the unmarried instructors, research associates, and lecturers are younger than their married counterparts, and that these women are more likely to advance in academic rank, either at Stanford or elsewhere, if they remain single. But we cannot document this from the data available to us.

Two more explanations remain to be considered. We believe each holds considerable relevance.

Women on the Stanford faculty may be concentrated in fields which are not sharing the University's general growth. Stanford is a selective university, offering programs of notable strength only in selected fields and holding to a minimum its offerings in other fields. Faculty members in these less favored fields have limited opportunity for promotion. An examination of the fields in which women hold faculty appointments will reveal a high proportion of fields for which future prospects at Stanford do not seem to be bright. The blight on the field's future is a blight on the faculty member's hopes for advancement as well.

Second, faculty women in general are more devoted to teaching than their male colleagues and are correspondingly less involved in research and scholarly writing. Jessie Bernard has documented this in her book on *Academic Women*, and it was revealed also in Radcliffe's study of her Ph.D. awardees and in other studies. With notable exceptions, faculty women are somewhat less "productive" in research than their male colleagues. The woman with family responsibilities may be able to keep up with developments in her field and to offer courses in it but may not have time to make scholarly contributions to its advancement. This pattern of work may describe a very useful member of a teaching staff, but it is not a pattern which leads to rapid promotion in faculty rank at this University or any other major center of learning.

There is a corollary to the above two explanations of the present participation of women on the Stanford faculty. One notes that there are certain fields of study at Stanford which are not strictly academic. Doctoral degrees are not ordinarily required for faculty appointments in these fields, nor is scholarly research a central value or a central activity of the faculty members. Certain of these fields at Stanford, e.g., nursing, physical therapy, women's physical education, are taught by a faculty composed mostly of women. An examination of the list of female assistant professors at Stanford and of the list of women who became emeritus at a rank lower than professor, reveals a high proportion of women from these "para-academic" fields. In contrast, the list of women who are professors, associate professors, and professors emeriti, include a few women from the same fields but more from fields like paleontology, English, psychology, Spanish, German, food research, French, dramatic literature, and even aeronautics and astronautics.

One must wonder about the wisdom, and the implications for faculty morale, of a university policy which permits appointment to academic rank (instructor or assistant professor) of a person who is fully qualified in the field he will be teaching, even though he does not possess a doctorate and does not often write for scholarly publications, but which then denies promotion to this individual. Whether the doctoral degree and scholarly publications should be a requirement for promotion in rank throughout the University is a matter for policy consideration. With the present composition of the faculty at Stanford this policy is especially significant for certain faculty women.

Summary. In brief, the picture of education of women at Stanford holds no surprises for anyone who is familiar with the national trends. In being coeducational, Stanford is like most American institutions of higher learning, and it is currently providing a model for those few Eastern schools which have remained steadfast against the trend toward coeducation but now wish to alter their course. In having an undergraduate enrollment which is about one-third female, Stanford fits in with the national picture that about 40 percent of all undergraduates are of the gentler sex. In having a graduate student enrollment that is about 15 percent female, Stanford is again very closely in line with national trends for graduate enrollment of women. In having a faculty that is almost entirely male, and on which women are clustered at the lower and less secure ranks, Stanford is no different from other major American universities. To the extent that it diverges from the national norm, this is so mostly because Stanford is a selective university with strong programs in only certain fields, and because Stanford has not elected to offer strong programs in some of the fields which are especially attractive to women—social service, librarianship, clinical psychology, home economics, elementary school education, nursery school education, etc.

Trends in life patterns of American women

Social change and individual life style. In order to understand the place of women in institutions of higher learning in the United States and to evaluate the most useful contribution that such institutions may make to women's lives, it is necessary to know something about the life styles of American women. These have changed over the past century, as a result of several economic and technological changes: the increasing mechanization of agriculture and the concomitant decline in rural population and rise in urban and suburban population; the westward movement of population; the shift of manufacture out of the home and into firms; the lengthening of life expectancy as a result of improved medical technology; the mechanization and automation of heavy work, with a consequent decline in job opportunities in farming and heavy industry and a concomitant rise in job opportunities in clerical, service, managerial, and professional occupations; the knowledge explosion.

As a result of economic and social changes, women's lives have changed in many ways. Young women stay in school longer than they used to. They marry at a younger age. No longer must they bear many children in order to have a few who survive to adulthood, and no longer do they bear children throughout their fertile years. Instead, women have a few children, almost all of whom survive to adulthood, and they bear them at times they and their husbands elect, usually while in their twenties. Marriage is almost universal for American women, but the probability that one marriage will last for a woman's lifetime has been changed by the rising acceptability of divorce. Employment of women in the home has changed from a preoccupation with household manufacture (cooking, weaving, sewing, preserving) to a preoccupation with human relations and socialization of the young, and secondarily with household consumption. What women do in the homemaking and maternal roles is very different from what their grandmothers did.

The employment of women outside the home has increased to the point that women comprise over one-third of the civilian labor force. It is estimated that a young woman graduating from high school today may expect to spend 25 years of her life in paid employment outside the home. Her principal period of employment will not be as a young, single, working girl (most girls marry shortly after they leave school) but instead as a married woman whose children are in school or have grown up, and perhaps also as a divorcee or a widow.

All these changes in the life styles of women have been widely documented by scholars, and a number of sources providing this documentation are cited in our list of references. Changes in women's life styles have also attracted the notice of popular writers (e.g., Friedan in her *The Feminine Mystique*) and their books have sold to a large audience. Concern with these changes led President Kennedy to appoint a Commission on the Status of Women, whose reports were issued in 1963. The recommendations of this Commission have resulted in changes in employment patterns by government agencies and have inspired widespread discussion of the education of women on the campuses.

Education and employment. The facts about the employment of women in the United States comprise an exceedingly complex picture, and no purpose would be served by a detailed treatment of them here. The likelihood that an American woman will be employed and the character of her work depend on her age, her marital status, the region of the country in which she lives, whether her home is rural or urban, her educational background, the occupation and social standing of her husband, the ages of her children, her race, her religion, and her own occupational history.

Two facts do, however, merit mention here. The first is that the more educated a woman is the more likely she is to be in gainful employment. This is so despite the fact that educated women are more likely to be married to men whose incomes are capable of supporting a household. In particular, college women are proportionally much better represented in the United States' labor force than are women with less than a college education, and women with graduate degrees are even more likely to work.

The second important fact is that the educational achievement of a woman is closely linked to the nature of her work. Women with less than a high school education are typically found to be farm workers, factory operatives, sales clerks, and domestic and other service workers. Women with high school diplomas are most commonly found in office work and in nursing. College women are primarily in the professions. The leading profession for them is teaching (grade school and high school), and this has been so throughout the history of college education for women in America. Other important professions for women graduates are social work, librarianship, dietetics, home economics, and nursing. Many college women are also in secretarial work and other positions in business.

The primacy of marriage. The central fact of a woman's life is her marriage. To her as a person, it represents the most intimate bond she has to another human being ("forsaking all others"), the joining of two sets of personal values and aspirations into a single set of shared hopes, sexual satisfaction, fulfillment as a woman, the opportunity for motherhood. It is equally true that a woman's marriage determines where she will live, what kind of people she will meet, how often she will move from home to home over her lifetime as her husband's career develops, the kinds of lives her children will have during their formative years, how much money will be available for her to spend and how it will be spent, her opportunities for travel, and the like. The sociologists remind us that while a man's place in our social system depends on the work he does and his success in it, a woman's place depends on the marriage she makes. Her status is "derived" in this sense.

American woman marry in their late teens or in their twenties. The age at which a woman is likely to marry depends on her education and her social class, but even for the best educated and socially most privileged the age is young.

It is hardly surprising, therefore, that marriage is uppermost in the thoughts of college women. The coed is very likely to be a bride sometime in the next five years, and she knows it. She also knows how important the marriage will be for her future happiness and for the quality of her life.

Many studies have been concerned with college women's educational plans and vocational aspirations, and one after another the authors of these have observed that college women see both education and work in a contingent and tentative way, subordinating their plans for these to their aspirations to marry and have a family. Although feminine reticence may conceal this preoccupation in casual conversation, any earnest and searching interview with a college woman will reveal how central her concern is with marriage.

It would be incorrect, however, to state that college women have no important intellectual goals or aspirations, no sincere interest in the world of work. It is only when they are compared with college men that their intense concern with marriage is notable. For college men, it is work that is central, precisely because the meaning of work for a man's identity is comparable to the meaning of marriage for a woman's.

Head and heart. Of all the studies of women's lives today, perhaps the most pertinent to our concern is the current work of Alice Rossi, a sociologist at Johns Hopkins University, herself the wife of a university professor and the mother of three young children. She is working on data from a weighted sample of 15,663 college women graduates from 135 American colleges, in a study that began with a first written questionnaire administered when the respondents were college seniors in 1961 and continued through a fourth questionnaire administered three years after college graduation. She has found it useful to categorize college women in three groups:

> *Homemakers.* These young women report they have no career goal other than being housewives.
>
> *Traditionals.* These young women have long-range career goals in fields in which women now predominate–elementary and secondary school teaching (excluding mathematics and science teaching), social work, nursing, library work, secretarial work, home economics.
>
> *Pioneers.* These young women have long-range career goals in predominantly masculine fields: the natural sciences, business management, public and educational administration, medicine, law, engineering, dentistry, architecture, economics.

Only a minority of college graduates put themselves in the first group, and in Rossi's sample even a smaller minority (7 percent of the women queried three years after graduation) are in the last. The majority are in the "traditional" category.

These three choices differ in many ways, and in the paragraphs below we explore these differences, noting that the satisfactions available from each role vary from decade to decade in a woman's life. Before doing so, however, we may note the social usefulness and importance of college-educated women whether they be "homemakers," "traditionals," or "pioneers." Most college-educated women marry, most of those who marry have children, and whether or not they have children most college-educated women spend many years of their lives in paid employment at worthwhile work. All are citizens, and all draw on their educational experiences in making political and social decisions, in enriching their lives and those of their families, in participating in the progress of their communities and their nation. Senator Stanford believed in the value of educating women for three reasons: 1) for women's enlightenment; 2) "because if the mother is well educated she insensibly imparts it to the child;" and 3) "that females shall have open to them every employment suitable to their sex." All three of these aims apply to the lives of women today as much as they did in the time of the Founders, and all apply to homemakers, traditionals, and pioneers.

The choice of a "traditional" occupation enables a college woman to respond to both her head and her heart. She enters a life style that is compatible with marrying and having a family, and one that also enables her to use her intellectual ability, to engage in work that will bring her into meaningful and respected interpersonal relations with other adults, and to be very useful to her society. It is not a life that arouses deep questions, in her own mind or in the minds of her acquaintances, about her femininity. There are critical and growing shortages of personnel in all the traditional fields. This means that the married woman can find work in them almost wherever she lives and regardless of how frequently her husband's work causes her to move from one spot to another. Further, part-time work is often available in these fields precisely because the administrators in them are accustomed to accommodating to the needs of married women with families. In addition, often longer summer vacations can be arranged, to enable the mother who works in a traditional field to be at home during the time her children are not in school. And there are widespread opportunities to "revitalize, retread, and retool" in workshops and summer courses in education, nursing, and social work, to meet the needs of the woman who dropped out for a period while her children were young. Opportunities for advancement to very high level positions are limited in these fields, especially to women (for example, most elementary school teachers are women but most principals are men, as are the higher administrators in school systems), and the salaries are less than spectacular, but for married women responding to heart as well as head neither of these drawbacks is major. The woman with a family who also works in a traditional woman's profession usually finds she does not have enough time for much volunteer community service nor for pursuit of the hobbies that otherwise would engage her, but usually the regret that she feels about these lacks in her life is balanced by the satisfactions gained from what she *is* accomplishing.

The college woman who sees her future as a "homemaker" is likely to find considerable satisfactions in her life in the first decade or so after graduation. Very likely she will marry soon after graduation, and in the early years of marriage she may work to help support her husband in his graduate education. The work will lack challenge (she may be a secretary or a laboratory assistant) but the cause is noble. As soon as they can afford to forego her salary, she will quit work and have their children, and the rearing of these children will occupy her for the next period of her life. Many older women look back on the years when their children were very young as the happiest years in their lives. It is when her children are in school that the college-educated homemaker is likely to begin to experience some deep doubts about her life style. By this time keeping house may bore her, she may find that her children do not need (nor indeed benefit from) her undivided attention, she may discover that her husband is so committed to his work and it is so demanding that she cannot enjoy as much of his companionship as she had hoped, and she may find that a round of activities in clubs, volunteer activities, and parties offers inadequate intellectual satisfaction. The college-educated mother may find herself reading articles in women's magazines about how she is a chauffeur, nurse, cook, laundress, janitor, and social director, and is underpaid and underappreciated in all those roles. For this woman, as well as for the woman who once aspired to intellectual pursuits but set these aside when she married and had children, the mid-thirties may bring a kind of "identity crisis" or "commitment crisis" of the sort that educated men more commonly experience in their late teens and early twenties. Even less attractive is the position of many a homemaker in her forties, when her husband is at the peak of his professional career and deeply involved in his work away from home and when her nest is emptying as her children enter college, start to work, marry, and establish homes of their own. As her youthful attractiveness fades, this woman often comes to feel serious doubts about her own continuing femininity as well as about whether other people really need her, and self-esteem plummets. Some women in the homemaker role find supplementary satisfactions in volunteer work. They meet important needs of many communities, in service to the sick and handicapped, to the economically disadvantaged, to foreign students. They participate in political campaigns, and they raise funds for their universities and churches. Similarly, the hours in the homemaker's life that are not filled with meeting family responsibilities may enable her to pursue her interest in one of the arts, in travel, or in some other hobby which is meaningful to her. But many women for whom the homemaker role was satisfying in the twenties and early thirties become dissatisfied in it thereafter, and as they change their attitudes toward work they fret about the "impracticality" or "uselessness" of their liberal arts education and about the "meaninglessness" of their lives. Often such women search for meaningful employment, and they seek educational opportunities that will enhance their suitability for work. The homemaker orientation has its limitations also for the unfortunate woman who is divorced or widowed, as well as for that occasional woman who wished to marry but did not succeed in doing so–it takes two to tango, and a woman can be a homemaker only if she has a breadwinner.

The "pioneer," on the other hand, will find life very demanding during the first decade or so after graduation, precisely the period when the homemaker is in her element. The professionally ambitious woman is not attractive to as many men as other college women are, and this means her opportunities to marry are restricted. It is not easy to put a positive cast on this, though Rossi has tried:

> As she gains advanced training and confidence in her ability to master an exciting field of study and an important job, she may not want to marry many men she would have no objection to earlier in her life. She is not an object less desirable in the eyes of men, but a woman who finds fewer men desirable.

Most young women feel there is a real conflict between femininity and profound intellectual and professional commitments, and they are troubled by the conflict. It is a fact, however, that most professionally oriented women do marry and have children. Often they lower their professional aspirations at the time they marry, or they devise a way to continue their pursuits on a reduced basis. Still they worry about the effect their absence from home may have on their young children, and most mental health specialists believe this worry is not a trivial one. They find that our society offers very few supports for their life style: we do not have a servant class from which the professional woman can recruit a housekeeper; we do not have high-quality child care centers for the children of working mothers; and our income tax laws do not recognize the legitimacy of the special expenses working wives incur. Further, the more specialized a woman's work is the less able she is to move to a new community. The practicing physician or attorney would lose her clientele if she moved to a different state. The Egyptologist happily at work in a metropolitan museum might find no resources for her work in another locale. The specialist in Renaissance painting at College X might find that at College Y that field is already well covered by another person or that there is no plan to offer courses in that topic. The relative immobility of the "pioneer" can put strains on a marriage between her and an equally well educated and accomplished man, especially in our present era when the intellectual is a migrant worker. The man whose wife is happily ensconced in a home with workable housekeeping arrangements and in a job that challenges her abilities and absorbs her interests must think very carefully about moving to another job which is offered to him in a different community, no matter how attractive that job is to him nor how important to his professional advancement. Even his sabbatical year can be frustrating for the academician with a professionally employed wife. Withal, the professional woman is much admired and envied by other women, especially when they are in their late thirties or older. Usually she is making a very significant contribution to the welfare of our society and its people, and she finds excitement and challenge in life at a time when some of her homemaker friends are bored and frustrated by the sameness and monotony of their lives. Because her needs for income are less compelling than those of her male colleagues, she is able to choose her jobs on the basis of their challenge and the interest they hold for her, and this means she has great opportunities for service and innovation.

Recommendations*

The family is the fundamental unit of society, the center of the emotional lives of its members. In those segments of our society where family functioning has languished or been disrupted by the negative influences of other social institutions, one observes many signs of social and personal pathology. A university's policies towards its students and faculty should recognize the unique importance of family life to human well-being, and these policies should be directed toward enhancing the strength of the family system rather than attenuating it. Its policies toward women students and faculty members need to be especially sensitive to the needs of the family system, since women are central to a family's stability and continuity. All of the recommendations that follow assume that institutions of education should recognize the singular importance of the institution of the family, and that the functioning of the two institutions should interlock in mutually enhancing ways.

Universities have become more sensitive to the needs of all their constituencies and have moved to augment and regularize procedures for receiving advice and recommendations from students, alumni, younger faculty members, and other interested parties, as well as from the more senior faculty members and administrative leaders who have long been heard in decision-making councils. This move is all to the good, but it will not necessarily mean that the special educational needs of women will be voiced. Women students are not necessarily aware of their special educational needs, since they are at a stage of personal development where quite properly their central concern is with their social and interpersonal needs. They tend to accept the prevailing ideology of intellectual and educational equalitarianism. It may be noted that recent highly publicized efforts by Stanford women to change their situation at the University have centered on their social and interpersonal situation–on the availability of contraceptive information from the Health Service, and on the acceptability of living off campus during the later undergraduate years.

It is only after women have married and begun rearing their children that they become aware of the distinctiveness of their educational circumstances; these women are not members of any of the constituencies of the University, and they are not present to speak at meetings of students, faculty, and administration. Even those women who are in the campus community and who are concerned with the education of women may be expected to speak only with muted voices, for today's strident modes of protest, including the rhetoric of extremism, are unfeminine. Stanford's educational policy makers will need to listen with sensitivity in order to hear and understand what the special educational needs of women may be.

1. *A standing committee to be concerned with the education of women at Stanford.* Stanford now has no official or group whose special responsibility it is to consider and to safeguard the interests of our women students. At present we have no dean of women. Many universities today have a vice-president for women's education, but there is no such official at Stanford. At many universities, there is a senior administrative officer who happens to be a woman (perhaps the Dean of Education, or the Dean of Home Economics, or the Dean of Social Work) and this person comes to represent the needs of women in the councils of the university; Stanford has no such person. Neither in the formal nor in the informal structure of the University is there a person or group to speak for the education of women. This is a serious lack.

   In 1957–1958, The Women of the Faculty (an organization which was active during that period, when the Faculty Club was a men's club) formed a committee that worked on its own initiative to prepare a report on "Motivation and Education of Stanford Women Students"* for the President's Office. The group received no formal response to its report, and perusal of this sensible and mildly worded document discloses only one recommendation in it that has subsequently been acted on–a recommendation for adequate on-campus housing for graduate women, especially those from other nations. This illustrates the need for a responsible agency in the University whose declared function is to oversee the education of Stanford women.

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*These recommendations are Professor Siegel's. They are based on the foregoing report, and also on conversations and consultations she has held with many individuals on the Stanford campus. These persons are not responsible for these recommendations, but their contributions are appreciated: the members of the Steering Committee of the Study of Education at Stanford, the staff of the SES (especially Dean Hind), the students in Mrs. Siegel's SES seminar, Dr. Barbara Arons, Professor Esther A. Conroy, Mrs. John M. Freeman, Mrs. John G. Gurley, Mrs. Richard W. Lyman, Miss Sally Mahoney, Professor Lois Meek Stolz.

There should be a standing committee of the University whose responsibility is to consider and evaluate policy decisions being made throughout the University, commenting on how these policies will affect the education of women at Stanford. This committee should seek to formulate and implement policies and practices that will improve the education of women at Stanford at all levels–undergraduate, graduate, and professional. Members of the committee should include top administrative officials in the University, faculty members of both sexes, undergraduate and graduate students of both sexes, one or more representatives of the Faculty Women's Club, and one or more representatives of the alumnae of Cap and Gown (Stanford's women's honorary society).

It is this writer's impression that at present Stanford serves the educational needs of women students who are "pioneers" (see p. 91 et seq.) and to a lesser degree the needs of those who are future "homemakers," but that it does not presently meet the educational needs of the women students who are "traditionals." Since, as is discussed on pp. 91–92, the traditional-role orientation seems to be the most adaptive for women in twentieth century American society, the most sensible response to the demands of head and heart, this omission in Stanford's educational program is especially unfortunate. Nationally, the traditional orientation is the preponderant one among college women, and it is our judgment that it is preponderant locally as well. Doubtless there are more "pioneers" among Stanford's very selected group of women students than among all college women nationally, but still they are probably a minority. Moreover, if the critical personnel shortages in the traditional fields are to be met, it will be by women. No comparable claim can be made about any critical need for women lawyers or hydrogeologists.

2. *Admissions policies appropriate to women's life patterns.* Stanford's admissions policies are geared to the needs of unmarried young women, including both those who wish to enter as freshmen and those who wish to enter as graduate students. The policies are not responsive to the needs of married women, including those who wish to transfer to Stanford from another institution because their husbands are now graduate students at Stanford, interns or residents at the Medical Center, or faculty members. The policies are also unresponsive to the needs of mothers who have been away from educational pursuits while rearing their children and who wish to resume their education. Age limits on the beginning graduate student are set by many departments, ignoring the special circumstances of the woman who has been occupied with rearing her children. These admissions policies are prejudicial to the most daring and ambitious of our women–those who wish to combine marriage and a high-level career, and to find ways of doing that which protect their husbands and children as well as their educators and employers. All the admissions policies of Stanford–including those for undergraduate transfers, for graduate students, and for professional students–should be examined for their consonance with the life styles of women today.

3. *A campus community with diverse role models for women students.* In modern social psychological theory and research, there is a strong emphasis on the importance of *models* in

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*The Committee of Women Faculty Members prepared and submitted that report. Its members were Professors Lois Meek Stolz (Chairman), Pauline Sears, Helen Farnsworth, Helen Schrader, Frances Shaftel, Lois Todd, and Elva Brown.

the socialization of the young. A youngster learns how to behave by watching and imitating the behavior of others. These others are his models. Adolescents and young adults learn about the lives of mature adults by observing them. Students typically model themselves after particular adults whose values they share and whose life styles seem appealing and effective. Most research shows that the individual chooses as a model someone of the same sex. The choice of a model is also guided by other perceived similarities between the other person and the self, as well as by the kindness, warmth, and concern which the other person shows toward the self. Further, it is guided by the person's effectiveness and competence.

Educational institutions have been slow to recognize the implications of the social-psychological research about modeling, despite the existence of countless studies documenting one aspect of modeling: that students choose careers partly on the basis of their experience with individual faculty members exemplifying those careers. However, just as we all have been speaking prose all our lives, wittingly or not, so also have we been serving as models, for good or for ill.

The Stanford community has many more men than women who are appropriate models for our students. Most of the attractive women on the campus are secretaries and clerks; although we should not be surprised that many Stanford women choose to enter the same kind of work after graduation, we may wonder whether this represents the maximal use of their talents and their education. We need to consider what models are available to them for other sorts of work and for other life styles.

There are some very attractive young women in our campus residence advisory program, and they have a notable influence on our women students. Probably a young woman resident adviser is more influential than an older woman, whose experience and life style may seem distant from our undergraduate women in this era of rapid social change. The wives of faculty men resident advisers are also unusually significant role models, serving to personify the life of the young wife and mother.

Faculty women serve as important role models for serious students. Their effectiveness depends on whether they are vital and attractive individuals. A lively and able woman on the faculty, one who seems to be enjoying life and who is enthusiastic about her work, can be an inspiration to many women students. This will be especially true if the faculty woman is married and has children, for young women aspire to be married and to have a family, and they are less likely to wish to emulate someone who has not.

Women physicians in the Cowell Student Health Center, and women social workers and nurses there, are instances of role models who are highly visible to the Stanford student body, and correspondingly influential. To the extent that these women are committed to their work, feminine and attractive in their conduct, warm in their concern for students, and exemplars of humanitarian values, they have great potential for molding the lives of our women students. This should be considered in the recruitment and selection of Health Center personnel.

There are many women on campus who could be effective role models but who are not at present "visible" to Stanford students. The social workers in the Medical Center constitute a particularly poignant example because they are the principal representatives of that vital profession on this campus, as we have no training program in social work. Most Stanford women students have never met any of the social workers in the Medical School, a very personable group of women who exemplify life styles that would be very appealing to women students. These social workers typically are married, and most of them have children. They are working effectively in a field with high ideals of service, humanitarianism, and professionalism. It is "a woman's field," and one for which many of our women students would be ideally suited. We need to devise ways to enable these women to serve as models on the Stanford campus.

The same point may be made about many of the highly educated women working as research associates in laboratories and libraries around the campus. Often they are cloistered from student eyes. How can we make them visible to the women students who would admire them and see them as exemplars?

Traditionally, the role model has been a generation older than the persons who emulate him. Thus, the great surgeon was 20 or 30 years older than the young residents who avidly watched his work and sought to imitate his every gesture. Today, with a rapidly changing society, there is a much-discussed "generation gap" that makes some mature adults seem less "relevant" as models for students. Many young people learn most readily from individuals just a few years older than themselves. The models who interest them most are individuals now occupying just the next step up on life's ladder. Therefore it is a mistake to think of the educational community as a two-generation society in which the older generation are teachers and the younger are learners. Rather, much is learned by the youngest students from those just a little older than they. Seniors are models for freshmen, and graduate students are models for undergraduates.

Men of every age and every stage of academic development may be found on the campus, providing role models for men younger than they, but the same is not true for women. Our policies informally exclude young women with young husbands and small children. But such young women could be very meaningful role models for our undergraduate women. As every courtroom lawyer knows, often the most persuasive evidence is not the words that get transcribed into the record, but rather it is some visual event that the jurors observe in the trial–the pitiful appearance of the injured victim, the paling or blushing of a witness. The enrollment of young mothers in campus classrooms could set the stage for similarly compelling visual events. A young woman's arrival in the classroom, after she had kissed her husband goodbye at the curb and he had driven off with their youngsters to care for them during her class time, would be mute testimony to the value that both she and her husband set on her educational attainments. For many young coeds, observing this scene and pondering its implications would have more impact on their educational aspirations than a dozen solemn lectures by middle-aged deans.

In our admissions policies and in our restrictions on part-time enrollments for individuals with heavy family responsibilities, we have banished from the campus just those students who might provide the most positive and constructive models for our women students. For example, recently a young mother applied to Stanford for permission to complete about thirty units of work, on a part-time basis, so that she could transfer these units to her alma mater, Sarah Lawrence, and thereby complete requirements for a B.A. from that institution. She had left college in her senior year to marry, and in the past few years had worked to support her husband while he earned both a Ph.D. and an M.D. In addition, they had had two young children. This young woman was in our community because her husband was a resident in the Medical Center. She was told by an admissions officer that Stanford would not admit her, though her academic record was good. She understood that this decision was based on a policy not to dissipate our educational resources on students seeking degrees elsewhere nor on part-time undergraduate students. The decision deprived the campus community of a role model who could have had a significant impact on many of our undergraduate women. It would have been a creative act of educational administration to have admitted this beautiful young wife of a handsome young doctor, enabling her to study part-time. Their appearance on our campus would have been a morality play for every other young couple here who are contemplating interweaving their educational, marital, and parental futures.

In sum, we need to set educational policies that create a diverse mix of role models of both sexes on the campus, and we need to find ways to increase the availability and visibility of these models to our undergraduate students. Achieving the latter may involve changes in the residential and dining arrangements on the campus, creating informal social settings in which undergraduate students may learn to know as persons a diversity of members of the Stanford community.

4. *Part-time study for individuals with unusually demanding family responsibilities.* Most gifted and ambitious individuals who wish to benefit from a Stanford education are able to enroll for a full load of study each quarter. A few are not. At present there are strong pressures to demand of every student that he enroll full time (or divide his time between courses and supervised research or teaching) and that he complete his degree work within a specified limited time period. These pressures have already resulted in policies requiring full-time enrollment of undergraduates, and we are a long way toward making the same demand on graduate students. These pressures are responding to the undoubted need to deploy Stanford's limited educational resources with maximum effectiveness.

We must question the wisdom of any educational policy that sets the same standard for all students. Individuals differ, and it is sound institutional policy to respect individual differences. The faculty would be bored by a student body all cast from the same mold, and in such a homogeneous student body there would be little that individuals could learn from each other.

There are talented and able individuals whose family responsibilities are so heavy that they are able to study on only a part-time basis. Most of these individuals are women, but some are men. We recommend that Stanford set the policy of permitting part-time enrollments, with commensurate tuition reductions, for students who are qualified in all other respects but whose family responsibilities preclude their studying full time. Part-time study should be permitted at the undergraduate as well as at the graduate level for such individuals. They will provide role models for effective persons who are fulfilling their emotional commitments to members of their family while at the same time pursuing their own intellectual and career goals, and the campus needs such role models.

Under this policy, special consideration should be given to former Stanford students who dropped out of study before completing degree work and who could return to complete the degree on a part-time basis. Many young women who left school to marry, at the time when early marriage was the norm, would benefit from such a policy.

5. *A review of the status of women on the Stanford faculty.* On pages 85–89 of this report, some facts about the current status of women on the Stanford faculty are reviewed. The questions raised by these facts should be explored, to determine whether appointment and promotion policies need revision in order to improve the climate for women faculty members on this campus. This recommendation is a corollary to the recommendation that the Stanford community should provide a diversity of positive role models for our women students.

6. *Innovative programs in the education of women.* In recent years, there has been considerable national interest in the education and status of American women. This has been reflected in President Kennedy's appointment of a national commission on that topic, in a recent Constitutional amendment, in a spate of recent Congressional legislation concerning women's employment, in current governmental directives in civil service employment, and in a variety of new programs on many university campuses.

Of the university programs, perhaps the best known is President Mary Bunting's Institute for Independent Study at Radcliffe College, which serves the needs of mature women living in or near Boston who wish to pursue advanced education and individual scholarly activities on either a part-time or a full-time basis. This program has brought to the Radcliffe campus many interesting and admirable women who otherwise would never have become acquaintances of the undergraduate women students, and it has given these individuals a center for pursuing their scholarly interests. Since Radcliffe is Stanford's only serious competitor for the best women undergraduate applicants in the nation, its programs should hold special interest for us.

At Stanford, funds have been secured from the Macy Foundation for a special program for women in medicine. The aim of this program is to assist women in securing M.D. degrees and in taking the next steps in a medical career–internships, residencies, research training. For the married woman physician with family responsibilities, efforts are made to secure appointments on a part-time basis–opportunities for her to continue medical work during the period that her family is a central concern. Arrangements are being made for mature women physicians to return to active careers in medicine after they have been away from the field while rearing their children. Part-time residency training in the Department of Psychiatry has been made available to several such women in the past few years, with notable success. The married women physicians with families who are in advanced training at the Medical School under this innovative program are attractive and meaningful models for the young women students working for M.D.'s and for Stanford undergraduate women contemplating entering medicine and wondering about its appropriateness for them. Dr. Barbara Arons, herself a wife and mother of young children, serves in the Dean's office of the Medical School as the administrator of this program. The University might wish to consider whether this innovation in one of its professional schools could be a model for similar programs elsewhere at Stanford.

October 1968

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Appendix 8 Memorandum on International Students

From: Kenneth J. Cooper, Associate Dean of the Graduate
Division for International Studies

Graduate Education and the International Student at Stanford

I will not discuss in this paper any of the regular responsibilities and activities of the Bechtel International Center and the International Student Office except as they will be relevant to a review of graduate education at Stanford and what might be done to improve the educational experience of the international student. Our regular counseling functions and student programs yield a great deal of information about the experience of the graduate student at Stanford. Many of the problems we encounter can never be avoided and can only be handled as they emerge, but through the years we have encountered time and time again a number of recurring problems that could be alleviated through careful forethought and planning. It has also become clear to us that there are many ways in which the experience of the foreign graduate student at Stanford could be immensely enriched. These will be the areas touched upon in this memo.

I have not seen a draft of any paper from SES on graduate education at Stanford, and therefore am unfamiliar with what has already been suggested. I also do not know to what extent my comments should be restricted to specific suggestions for improving existing facilities (short range) or should encompass suggestions for revolutionary changes in focus and direction (long range). Therefore, I will speak in broad, long range, "ideal" terms at first and refer to the specifics later in the paper.

Very little of the concern I express about the focus of graduate education at Stanford is new, but I want to stress its relevance insofar as it relates to the international students. There are increasing numbers of professors, and in some cases entire departments, who are initiating changes in many of the areas mentioned. If I had more time I would refer to these specific examples of effective steps currently being taken at Stanford.

International Student Objectives

The student from overseas has reasons for coming to Stanford similar to those of his American counterpart. He is motivated toward a pursuit of knowledge and a greater understanding of his own particular professional field of study; he is interested in exploring ways to develop his own personal potential; he is interested in meeting new people and having new interpersonal experiences. In addition, like the American students and professors who travel abroad today, the foreign student comes to Stanford in order to feel what it is like to be part of another culture.

Unfortunately, and this is felt to be true also for many American students, graduate education at Stanford often loses a great deal in translation between objectives and reality. I am afraid that, like his American counterpart, what the foreign student had originally envisioned as a more holistic experience, molding the objective of a professional degree with a broadening interpersonal human experience while at Stanford—too often boils down to a competitive race for grades, course after course, with the ultimate goal becoming the mere act of "obtaining the degree."

Many of the most promising, creative students would, I believe, be able to get more out of their Stanford experience if the objective of graduate education were to provide a rich resource of knowledge and problem-solving experience and facilities for stimulating the student to use these resources, and focus less on setting up traditional rigid criteria for measuring the achievement of one student against the other in order to guarantee that all those who receive the degree meet a "standard."

It must be understood that I am talking about the need for new opportunities within graduate education at Stanford for those students and professors who *are* anxious to give new reason and substance to their academic experience—and, of course, for a long while these scholars will be in the minority. The largest component of education will always be the passing on what is already known, from one generation to another. I am merely urging that, in addition to this role, the University should quickly build another component which will be more flexible, more experimental–which will focus more on the scholar's own professional interests, on his own desire to use the resources of the University to explore in depth those interests, to be judged in terms of how successfully he achieves those personal-professional objectives and judged less by traditional standards.

The particular professional objectives of the international student and the needs of his country are often inconsistent with the objectives of an M.A., and, especially, a Ph.D. program at Stanford. This problem is enormous; it has been talked to death at countless international meetings, and I am certain that there simply are no answers that can be applied in any general way to its relation to graduate education at Stanford. I do think, however, that each school and department should take a more careful look at what it thinks it is accomplishing in its advanced training of foreign students. We have examples at Stanford of individual professors, and sometimes departments, who have found it possible and meaningful to tailor the advanced training they offer to the particular needs of the student. If graduate education in general moves more in this direction, then one of the critical gaps for the foreign student will be eliminated.

We find among our international students about the same proportion as among American students of those who would like to use their academic wisdom in a socially constructive way. Many young people come from their countries very conscious of the need to learn new techniques for bringing about changes in their societies. Students throughout the world are beginning to demand that education be relevant to the world around them. They want to learn how to make a better world. For this admittedly small but vital number of students–American and foreign–why can't the University use its resources in a fresh way? Why can't it help students in a particular discipline lay out before themselves "the most critical problems facing the world (or a particular country) today," assist them in examining possible solutions, and wherever possible in trying out the most plausible solutions? A student-initiated, interdisciplinary, action-research project that met with great success recently was carried out with financial backing from the Ford Foundation at the California Institute of Technology. The project focused on practical solutions to the smog problem and utilized very sophisticated research methodology. The Ford spokesman remarked that "all teaching could be done this way."

There *are* several programs underway at Stanford involving multi-discipline approaches to several critical problem areas too broad to be handled within one academic framework. The more this becomes academically respectable, the sooner there will be a better match between the student's cry for relevance and the University's insistence on academic excellence.

I am suggesting several things:

1. The University should be a place where people come to wonder, to explore independently those questions and ideas that concern *them* most. (I cannot make a distinction here between graduate and undergraduate, or between student and faculty, for that matter.) There should be great *flexibility* in requirements, allowing the student to use the resources of the University for the purpose of free and deep exploration of his interests, wherever they lead him. There needs to be a "community of scholars" atmosphere. I suppose it means an elimination of the current grading system. I would think the situation would be immensely improved if students, once they are admitted for graduate work, are automatically continued–particularly for the M.A.–on a pass-fail basis.

2. The University should *encourage* students and faculty to look freshly at the world's problems and potentialities, to extract from analysis those areas that are *most* critical for human happiness and survival (regardless of whether they will lead to research contracts and prestigious jobs) and encourage a student to experiment and be imaginative in choosing his course of study. This will probably mean more interdisciplinary programs.

3. Professional counseling and guidance should be provided the student in terms of career objectives. The University should not channel and chain the young scholar to narrower and

> narrower esoteria in order to provide easy methods for judging how well he competes against others. Why not: a) assist the student in looking ahead, beyond the degree to the kind of life he wants to live, the professional role he would like to play; b) counsel him on the range of existing job possibilities in his particular field of interest (almost nothing is done by the academic departments along these lines); and c) help him plan a course of study that will allow him to point toward his interests, remain creative, and yet satisfy the department that he is a competent scholar. Most students have fairly ill-defined end goals when they enter graduate school and then find themselves forced to take whatever jobs are available on the market at the time they receive their degrees.

Admissions

We can always use more information than we have on the personal backgrounds, academic competence, motivation, and professional objectives of our foreign applicants. Many departments have become relatively sophisticated in being able to predict the degree of success of students who have come to Stanford from particular foreign universities. Dean Wise of the School of Engineering has tried to keep a record of the progress at Stanford of students from particular foreign universities. The Office of Foreign Graduate Admissions is the best source for information related to relative academic ratings of foreign institutions. Dr. Storey's office could be more systematically used by the academic departments, and she would be happy to have far more information on overseas institutions.

It is quite probable that the University-wide process of recruiting and selecting students from outside the United States could be far smoother and less risky if everyone had access to all the information that is available. The University has a rich resource among its own international students, post-doctoral research scholars, and traveling faculty that could yield a great deal of information about the relative academic merits of foreign institutions. It merely needs to be collected and organized. We need to know the policies and procedures now practiced by each of the schools and departments at Stanford. We need to know which procedures appear to be most effective.

There are several overseas services that can be used to help in the selection process (e.g., U.S. Educational Foundation, Institute of International Education, American Friends of the Middle-East). If adequate lead-time is available, offices of these agencies can arrange interviews with graduate applicants to Stanford, and can assist in other ways in evaluating an applicant's credentials.

Only very few departments are at all active in recruitment of international students. It might be valuable to compare the practicality and relevance of the education received at Stanford by those students who were recruited for particular academic programs with those who were admitted "sight unseen." If departments are interested in training people who will return and aid in the development of their countries there are ways they can increase the likelihood of achieving this goal. For example, in selecting students from abroad they can give careful attention to such factors as whether a person has had work experience in his country, whether he is married, and what his long-range goals are. A recent study by Godwin Chu of Stanford's Communication Department showed that foreign students with previous job experience in their home countries were more likely to return than single students entering Stanford directly after their undergraduate work. Stanford foreign alumni could be used with far greater effectiveness in the recruitment and orientation of students overseas. Departments can contact the Bechtel International Center and the Bowman Alumni House for names of appropriate contacts.

Up-to-date information on Stanford should be made available to foreign applicants. Too often a student arrives at Stanford with the expectation of working with a particular professor, only to find that he is away for the year.

English facility

This is still the major hurdle for a large number of foreign students. Each year it appears that through better selection procedures and through improved language training abroad the incoming foreign student is better able to handle the English language. However, if we look carefully at those areas that hinder optimum effectiveness among the foreign graduate student population the handicap of having to work in a foreign language still probably ranks highest.

Stanford requires that foreign applicants present results of the TOEFL Test (Test of English as a Foreign Language) if at all possible, and it is becoming easier for the Foreign Graduate Admissions Office to determine the degree of English competence of foreign applicants. We have on the campus a year-long series of English courses for foreign students under the direction of Dr. Clara Bush of the Department of Linguistics, and I heartily recommend that these courses be continually reviewed and improved. There is a need for smaller classes, more individual attention, more conversation practice, and more specific practice in writing research papers related to their particular fields of study. In other words, increased support should be provided Professor Bush in her desire to continually improve the effectiveness of her program.

Fortunately, there will be new intensive English programs offered during the summer, beginning in 1969. This will help reduce the considerable wastage during autumn quarter resulting from less than full academic and social participation by newly arrived foreign students. Many will be able to attend during the summer and be in full swing by September.

An experiment employed by a couple of departments (Professor Coladarci in the School of Education has had some success) is to permit a foreign student to write his qualifying exams in his own language, and then provide a translation later when not under pressure. I believe a similar policy applies to the dissertation in a few cases at Stanford. This seems to be a very realistic policy to me, unless we expect everyone in the world to develop English as his primary language.

Finances

Increasing numbers of foreign students now attend Stanford sponsored and financed by other than private means. When a foreign applicant is admitted he is requested to fill out a form describing his ability to meet the minimum financial costs of a year at Stanford.

Because a majority of the funds available to the University for student aid are restricted to American citizens or applicants for citizenship it is far more difficult for the graduate departments to offer financial assistance to a deserving foreign student than to an American student. There are no University scholarships specifically reserved for foreign students—as is the case at several universities.

For those foreign students who are at Stanford, unforeseen financial problems often present more serious hurdles than for the American student. His family seldom can get dollars out of their country in order to help, even in the few cases where money may be available. It is impossible for the student to return home for "a breather;" it is extremely difficult and often impossible for the foreign student to find temporary employment (often his visa status forbids this). Even long-term loans are difficult to obtain due to the difficulty students from other countries have in repaying in dollars once they leave the United States.

I have no specific suggestions at the moment, but recommend that a long-range look be taken regarding anticipated increases in tuition costs, increased living costs—for what appears to be an increasing dollar gap between this country and countries from which our future foreign students will be coming.

Dr. Robert Huff is the most knowledgeable person on this entire subject. His office has always been outstandingly helpful in making it possible for foreign students to meet their countless financial crises.

Academic input from international students

The international student could contribute far more than he does to the intellectual life of the campus. The foreign student's experience at Stanford has two clearly distinct components—one is academic and the other cultural. The very nature of the multi-cultural character of the foreign student population at Stanford enriches the total University environment for all of us. Through his contacts with people from over 70 different countries, the Stanford American student gains considerable sophistication, which helps prepare him for a shrinking globe. Class discussions are enriched when the "comparative" approach utilizing many different views is an everyday happening.

Many of the problems and concerns facing young people everywhere have common denominators. Most of the critical problems with which all societies must deal are going to be of an interdisciplinary nature, requiring specialists in many fields working together, trying to communicate with each other, trying to piece together their separate talents and focus them on targets of common concern. A considerable percentage of the foreign scholars who come to Stanford are broad thinkers, interested in multidisciplinary approaches to solving problems they see in this country and at home. We want to develop a mechanism within the University curriculum that will make it possible each quarter for *several foreign scholars to offer seminars* that will have this unique multicultural and interdisciplinary approach to some of the critical problems facing young people today. Several students are currently engaged in the initial stages of this effort by offering senior colloquia and special undergraduate seminars in subjects not covered by existing courses and which are directly related to the particular cultural background of the student.

Another obvious use of the foreign student at Stanford could be in providing orientation to the young American students about to study in France, Germany, Austria, Britain, Spain, Japan, or Taiwan.

Housing

Other than the initial language handicap, one of the most severe continuing problems facing the foreign student is the living situation. The difficulties experienced by American students having to live many miles from the campus are compounded ten-fold for the newly arrived foreign student. He does not have a car (and usually can't afford one), he has no friends with whom to share an apartment; if he has his wife with him she usually cannot speak English and is far more shy than her American counterpart and thus finds herself isolated and lonely–naturally affecting the husband's ability to obtain a satisfactory academic experience while at Stanford. If he is single and must live off of the campus, the loneliness, isolation, and lack of companionship experienced by many American single graduate students is of course intensified for the foreign single student. The few single female students drown their frustrations in complete immersion in their studies, and the single males who on the average are far less aggressive than the American male tend to associate with a few other males, usually from their own country, find that sexual abstinence is their plight, and seek what little solace they can from harmony in misery. It is not quite so bad if they can live on campus.

Ideal housing facilities appear to range from Escondido for married students (although more expensive than many can afford); apartments such as McFarland and Hulme with cooking facilities for many single graduate students, and with preferences for *single* apartments by most students or shared apartments with *private* bedrooms; large houses for 6–10 students within walking distance of the campus or on the campus, and Grove/Adelfa-type coeducational living for the younger, more socially inclined. Most foreign students find the forced adjustment to a roommate's sleep and study schedule difficult, and for many it interferes severely with academic performance. These students have been accustomed to private rooms either in rooming houses, with their families, or in university accommodations. In most countries including, for example, India, each student in institutions of higher education is provided with a single room.

More "field" experiences

Related to general concerns expressed early in this paper is the realization that life is becoming more "experiential." Traditional modes of teaching and learning will disappear. The lecture method whereby one person who "knows more" tells it to another who "knows less" and who sits and "listens" is less relevant today to the student interested in finding answers to the unsolved problems he sees around him in society. He wants to use new tools and work *jointly* with mature scholars and learn how to learn, how to use his own creativity, and how to attack new problems. He is more action oriented. The information explosion alone makes it necessary to search out new ways of unlocking areas of knowledge and applying them in problem-solving situations.

This approach to learning becomes possible when one is able to shake off the "classroom" concept of the role of the university. The real live laboratory is "out there," and it is becoming increasingly obvious that more top, creative students are determined to get their education "where the action is." There is no reason why the University should oppose this. In fact let us embrace it.

International students and American students alike find education most meaningful today when it touches something significant in the real world. The more students are encouraged to use current and provocative issues to give substance to the necessary theory and methodology–the more *relevant* education will be.

It will be doubly important for the international student to examine in some depth as many practical applications of his field as possible while he is here. It will be through the understanding of such practical applications that he will be most useful in his own country.

It has been suggested many times that experience in management, systems, and operations should be part of the training of all engineering and science students at Stanford. Many find after their return home that a round-up course in how to organize and apply their theoretical knowledge in very practical situations was what they lacked most in their training at Stanford.

Advising

Students whose academic training has been in a foreign educational system need a special orientation to the expectations and demands of their academic department at Stanford. In addition to the major jolt of the fast-paced quarter system and the "unit" approach to courses, each department has its own series of requirements and standards, which will be totally new for most foreign students. It should be the responsibility of each department to inform all new students from abroad (and many American students have also felt this need) of the context in which they will be studying. (An informal question and answer orientation program for new students each September would offer an opportunity for the transmission of the department's policies, procedures, and expectations.)

In addition, new foreign students should be assigned faculty advisers who are familiar with the difficulties of entering a new educational system, and whenever possible, who have had experiences abroad. These departmental advisers should assist the student in selecting courses that will not only train the student in his profession, but prepare him for the task of applying the material to existing conditions in his country. A foreign student who is programmed through a typical degree program may emerge ready for American industry, but be unprepared for conditions at home. There have been countless examples of students who–for the lack of an interested faculty adviser–have spent precious time and money for courses they will never use, and who have missed courses–perhaps in departments outside their own–that would have been invaluable upon their return.

To a certain extent it is inevitable that Stanford's training assumes the cultural, economic, and social context of the United States. Departments and individual professors could do more, however, to encourage foreign students to apply their material to the corresponding situations in their home country. Research papers and term projects of foreign students should whenever possible, be approached in the context of the technology and existing conditions in the students' homeland. (The initiative of the faculty is particularly important here, since many students from abroad are not aware of the flexibility which is sometimes possible under the American university system.)

Conclusion

This has been a very rough and hasty summary of some of my thoughts about graduate education at Stanford and its relevance for the international student.

The tone appears somewhat critical, but that is not my intent. There is no need for us to pat ourselves on our Stanford backs, so I haven't done so. I have chosen to suggest possible areas for improvement.

January 4, 1969

Appendix 9 Statement of Barry Askinas, Chairman of the ASSU Graduate Student Association

For too long graduate education has received the least attention from the university in its attempts at reform.

The AAUP has submitted a program for university governance which if implemented would truly bring students and faculty into the decision making process at all levels. SES has designed a curriculum for undergraduate education, which if put into effect would make Stanford one of the most exciting places in this country for undergraduates. The Dean of Students Office has already begun to implement an undergraduate residence program which has turned unfriendly dormitories into warm and relaxing places where education continues rather than suffocates. Even the archaic Food Service is finally being investigated by a University Committee.

Yet while the professional schools at Stanford are models for professional education in America, much of the more traditional graduate areas at Stanford continue to flounder in boredom and irrelevance.

The Graduate Student Association has presented to the university a program for action which we feel would improve the quality of graduate education and graduate student life at Stanford. It might be an exaggeration to call graduate education in America a total failure, yet, while Stanford's professional schools are setting an example of innovation and relevance for the rest of the country to follow, in the more traditional areas of graduate education, Stanford is retreating from the edge of greatness at a rapid rate.

We have called upon the university to take steps to accomplish the following goals:

1. Make inexpensive and adequate housing available to all graduate students.

Stanford houses 68 percent of its undergraduates but only 22 percent of its graduate students. With a vacancy rate in Santa Clara County of .4 percent (1 unit in 250), the need for more housing has reached crisis proportions. A recent editorial in the *Palo Alto Times* criticized Stanford for increasing admissions without having begun construction for housing more students.

2. Build a Graduate Student Center.

Faculty have their club; undergraduates their union; foreign students their center. Where can graduates meet one another?

Steps could be taken now to open a Coffee House in the basement of one of the Escondido Village high-rise apartments. In addition, a swimming pool could be constructed in Escondido Village, open to all graduate students and their guests.

3. Conduct a thorough investigation of Graduate Education at Stanford.

Graduate education in the United States is a very inefficient process, if not a disaster, especially in the traditional academic disciplines. The drop-out rate for students who begin study for a Ph.D. at Stanford is about two-thirds. This compares with a drop-out rate of about four-fifths in the United States as a whole. Stanford might take a self-congratulatory attitude and continue to waste millions of dollars (it costs $120,000 to $180,000 to produce a Ph.D. here) or take steps now to see what is right and wrong about graduate education and set an example for the rest of America's educational institutions.

We would hope for an administration-financed study on the scale of SES (the Study of Education at Stanford), conducted under the auspices of the Graduate Student Association and the Academic Senate. In its brief examination (and, it *was* brief!), SES concentrated on undergraduate problems. When they chose to look at graduate education, they systematically contacted only departmental chairmen. Nonetheless, SES did suggest some interesting changes which should now be investigated and perhaps implemented. For example, the February 26th letter to departmental chairmen reads, "It seems inconsistent for Stanford to devote large amounts of time and energy to the recruitment of undergraduate students, but almost none to the recruitment of graduates."

4. Develop programs to communicate to students even before they apply, what graduate work is all about.

So much unnecessary frustration and confusion arises out of ignorance and there is little room in today's programs to allow new graduate students to make mistakes or to change their minds.

The Graduate Student Association has arranged for an *Orientation Program* for new graduate students beginning with 1969–70 to be administered through the I-Center, which now runs a very successful program for foreign students, 80 percent of whom are graduate students, and financed by the administration. While some departments have designed programs for their new students in the past, others have done nothing. We want to remedy that. A committee of students, faculty, and administrators will begin meeting next quarter to plan a detailed orientation program.

The Bowman Alumni House and the Dean of the Graduate Division have put forth a plan to make use of alumni from Stanford graduate schools to see prospective applicants before they apply and/or after they are accepted to Stanford. This *pre-orientation program* will not be inexpensive, but in the long run should save much human and financial waste.

The Graduate Student Association suggests the development of a *De-Processing Program* for students who leave without completing a degree. We would learn a great deal about what is wrong with graduate education; make some people feel better about Stanford; and perhaps change some students' attitudes toward leaving.

5. More University staff concerned about graduate students

There are countless university personnel concerned with undergraduate student life and education. There are very few concerned with graduate student life, especially in the Humanities and Sciences. Something is wrong with the notion that a college senior may need some attention from time to time, but three months after graduation, when he becomes a graduate student, he is now mature enough and wise enough to sink or swim in an environment which is quite different from his undergraduate experience. (On the surface the deceptive similarities to undergraduate education often lead the new graduate student into trouble. It is exactly this type of problem that can be examined in our proposed Orientation Program.)

We see an immediate need for a Dean of Graduate Students in the School of Humanities and Sciences. This person could study admissions policy for Ph.D. programs, help design orientation, pre-orientation, and de-processing programs, and help recruit minority students for graduate education. In addition, the Dean or others on his staff, could counsel graduate students when they encounter problems which cannot or have not been handled at a departmental level.

Second, we see a need for a co-ordinator of graduate student organizations. This individual would serve both as an executive secretary for key graduate student organizations and as a resource person to help design and implement programs to bring graduate students from different departments and schools together for both intellectual and social purposes.

6. Make use of graduate students as Teaching Fellows.

Stanford would appoint advanced graduate students as regular faculty members. This would increase the ratio of faculty to students, and give selected graduate students an opportunity to have a superior teaching experience before entering their professions. For example, graduate students are well qualified to teach advanced undergraduate seminars in their thesis or exam areas.

7. Procedures should be established for interdepartmental graduate programs and degrees.

Areas worthy of investigation often fall across departmental lines. We seem to be in the midst of an era when departments draw rigid lines which their students are not supposed to cross. We are faced with the irony of the Stanford Medical School being a pace-setter and innovator, while the Humanities and Sciences contain some of the stiffest and dullest programs. We especially see the need for an interdepartmental program in Urban Studies.

8. Urge the formation and support of graduate student organizations in each department and professional school.

9. We further urge each department and school to accept students as members on all departmental and professional school committees.

10. Urge the administration to systematically consult graduate students whenever studies of or changes in graduate education are suggested.

In the past, such consultations have been spotty and highly personalized if at all.

11. We urge the university to establish a bureaucratic (YES!) grievance procedure for problems which fail to be resolved departmentally.

Undergraduates have the Dean of Students Office to go to bat for them. We have no one. The problem is further complicated by the fact that a graduate student is: a) a student, b) an apprentice professional, c) often an employee in his department. The department is the sole evaluator of his performance, has almost total control over his finances, and faculty tend to rally around faculty when there is a disagreement with a student, even when the student is right.

12. We urge the university to foster the recruitment of minority students to do graduate work at Stanford.

In some cases, this might mean a relaxation of academic standards for admission. Some departments and schools are already moving in this direction. The administration should encourage others to follow their example.

We trust that the implementation of these suggestions would make Stanford a far more exciting and stimulating university for graduate education and for undergraduate education as well.

Stanford Daily
November 25, 1968

Appendix 10 Memorandum of Virgil K. Whitaker, Dean of the Graduate Division

To: Professor Herbert Packer
Subject: Draft of SES Report on the Graduate Division

Mr. Robert Hind has very kindly given me a draft of the report of the SES Committee on the Graduate Division and has invited me to comment upon it. I do so the more willingly because I have believed from the first discussion of a study of education at Stanford that we need to recognize that half our students are on the graduate level and that the problems in training Ph.D.'s are probably the most serious in university education. On May 25, 1966, I wrote President Sterling urging these points, and again on June 24, 1966, I addressed to him a considerably more extended memorandum, indicating in the last half of it some of the problems that I felt should be studied. I am attaching copies of these letters in view of some of the specific suggestions made. I am therefore somewhat disappointed that more attention was not devoted to the Graduate Division by the Study of Education at Stanford, as I recommended, but I welcome the proposals for an on-going study.

In view of my imminent resignation as Dean of the Graduate Division, I shall not be involved in such studies, but I shall watch them with interest. I hope, furthermore, that the fact that I shall not be involved will enable me to view the points upon which I am about to comment a little more objectively than I otherwise might. I also regret that pressure of time has allowed me only a few days to reflect upon the points that I want to make. I hope that you will recognize that this is a somewhat hasty reaction and that it has not been possible to confer with my various associates as I should have liked.

Foremost among the many points in the report that pleased me is a clear recognition that our major problems lie in the Ph.D.-producing schools and departments of the University and that there is very great diversity among the problems confronting these departments. Coming to the Graduate Deanship from the Department of English, I had to learn, sometimes in the hard way, how different are the problems in the sciences or even in the social sciences and how different are the basic attitudes involved among the students. The report notes clearly one fundamental difference in that students in the sciences are primarily motivated toward research, those in the humanities toward teaching, students in the social sciences probably varying between these poles from department to department.

The report might also have noted, I think, that there is a major difference in the concept of the Ph.D. degree itself, once again with the sciences at one pole and the humanities at the other. In the sciences, broadly speaking, the Ph.D. program is thought of as training in methodology, and the dissertation often becomes merely a major research exercise demonstrating the candidate's mastery of the methodology of his subject.

In the humanities, on the other hand, professors are relatively indifferent to methodology or have even lost sight of it altogether, and the older notion that the dissertation should be a major contribution to knowledge persists. Once again, the social sciences lie somewhere in between. This difference in basic concept of the Ph.D. dissertation is one of several reasons why the post-doctoral fellowship has become an important part of training in the sciences, and in many areas prerequisite to a career of teaching and research in a major university, whereas it is relatively unknown in the humanities and far less common in the social sciences. The same difference in attitude toward Ph.D. training and the Ph.D. dissertation is an important reason for the somewhat greater average time taken by graduate students in the humanities to achieve the Ph.D. (I am happy to say that average times at Stanford in the humanities and the social sciences are apparently considerably shorter than national averages.)

The question of differences among the various disciplines is fundamentally important and needs to be checked out thoroughly. If real diversity exists, then a high degree of departmental autonomy is necessary and desirable, even though it inevitably results in some inconvenience for students and more for administrators. But if the diversity is only apparent and results in reality from the rivalries and idiosyncrasies of autonomous departments, then the resulting inconvenience to students, at least, should not be tolerated. I believe that the diversity is real, but I could be wrong.

In commenting upon the draft report, I wish first to address myself to five general policy questions. I shall then proceed to *seriatim* comment upon specific points and recommendations in the report.

General Policy Questions

1. Responsibility for Continuing Study of Graduate Education

The first recommendation of the draft report is that "The President, in consultation with the Academic Senate, and the Graduate Students Association, should appoint a commission on graduate education charged with conducting a study of Stanford problems in graduate school education, with special emphasis on Ph.D. programs." On the basis of my experience with the Committee on the Graduate Division and with its Policy Subcommittee, both of which seem to me among the most effective committees in the University, I wonder whether detailed study of the problems of graduate education should not continue where it has long been going on, namely within the Committee on the Graduate Division. This is not to question for a moment the value of an outside look by parties that are genuinely concerned. The proposals of the Graduate Student Association have undoubtedly provided an important and valuable spur to the Committee on the Graduate Division itself, as discussions of details in the report will reveal, and the present draft report should also produce the same kind of stimulus. At the same time, it is questionable, once attention has turned from general problems to the details of research and legislation, whether a division of responsibility may not merely produce frustration and contradiction. In fact, the use of the statement of the Graduate Student Association by both the SES Committee and the Policy Subcommittee of the Committee on the Graduate Division has already produced both parallel action and contradictory recommendations. As we proceed to details, this confusion seems to me undesirable. I do not see, furthermore, how responsibility can be separated effectively from authority, and in this area the authority lies with the Committee on the Graduate Division.

2. Involvement of Graduate Students

I thoroughly share the concern of the SES report that graduate students be involved in any process of study and recommendations. But I believe that the report is a little hasty in singling out the Graduate Student Association as the means of communication with graduate students. We need an association of graduate students, provided it is broadly based and genuinely supported by the graduate students. It seems to me, furthermore, that the incentive for such an association must come from the students themselves and not from administrative quarters. Granted all this, however, a name does not make a reality. I understand that the last meeting of the Graduate Student Association was attended by only twelve students, and there is no evidence as yet that it has enlisted broad support among the graduate students. Various schools and departments, on the other hand, have strong associations of graduate students with long experience and genuine contacts throughout the school or department. I suggest that our best policy would be to wish the Graduate Student Association well and to give it help as it demonstrates genuine support among students and genuine capacity to function effectively, but to rely not only upon it but upon the better established associations of graduate students which now exist. In other words, I believe that we should use every possible avenue of contact with groups of graduate students. If we rely upon any single association limited to a relatively small group of students, we shall inevitably place excessive emphasis upon the particular concerns and the special frustrations of that particular group.

3. Implications of Universal Financial Aid

I find the draft report disappointing in its failure to discuss three problems that seem to me fundamental to our conduct of graduate study for the Ph.D. The first of these is the implications of almost universal financial assistance to Ph.D. candidates. As late as ten or fifteen years ago, financial aid in the form of fellowships or even teaching and research assistantships was the privilege of a relatively few especially favored graduate students. Today, for all practical purposes, all Ph.D. candidates are being supported either by the University or by the federal government. This new level of support should have produced a radical reorientation of thinking both among the faculty and among the graduate students. In important areas it has failed to do so. In the old days, Ph.D. candidates proceeded at their own pace, inevitably a slow one, because they proceeded at their own expense. Most of them faced a horrendous problem of making ends meet. Adequate financial support should have produced a far greater effect in regularizing and speeding up the whole process of Ph.D. training than it has so far achieved. There is no question, in my judgment, that many faculty members and even departments are thinking in terms of the conditions that obtained when the present senior generation of faculty members earned their own Ph.D.'s.

Among graduate students, on the other hand, we need an ethic governing the acceptance and use of financial aid comparable to the ethic that now governs the professor in accepting faculty status within the University. Although the number is fortunately small, there have been too many examples at Stanford of graduate students who accepted financial aid and felt quite free to devote almost all their time to interests of their own completely irrelevant to the graduate study for which they were being supported. It is also possible that widespread support has stimulated students without adequate motivation or ability to drift into Ph.D. programs. These are only three examples of a wide range of problems involved in the effective use of financial support for the production of Ph.D.'s.

4. Criteria for Judging Ph.D. Programs

Another serious weakness of the draft report seems to me its failure to lay down any criteria by which the effectiveness of a Ph.D. program may be judged. For example, are we interested simply in turning out the maximum number of Ph.D.'s in the minimum amount of time? Or are we interested in turning out a relatively limited number of Ph.D.'s of maximum quality? Or are we interested in turning out Ph.D.'s who are unusually effective as teachers if they are in the humanities and social sciences and expert technicians if they are in the sciences and engineering? To put the matter in other terms, it is impossible to talk meaningfully about the effectiveness of a program unless one has some notion of what the goals of the program are, simply because objectives determine values.

Our objectives at Stanford must also be related to the peculiar traditions and resources and opportunities of Stanford University, and once again there seems to be no consideration of such problems as these. The Graduate Division, to cite another example, has been proceeding on the assumption that a high-level university like Stanford should devote itself almost exclusively to the production of Ph.D.'s in those areas in which it possesses unusual competence and resources, as it does in a relatively large number of the academic disciplines, and leave the training of Master's candidates to the newer campuses of the University of California and the rapidly developing state colleges. The soundness of this assumption seems not to have been considered. Further details illustrating the need to chart one's goals could be adduced, but the general proposition has been adequately illustrated.

5. Problems Inhering in the Faculty

The most serious omission in the draft report—and in my judgment it is a very serious omission indeed—is the failure to consider the responsibility of faculty members for the present very unsatisfactory situation in the production of Ph.D.'s. This oversight seems to be particularly unfortunate because a faculty committee can certainly speak to their colleagues with a frankness which deans, including graduate deans, find impolitic and unwise.

Some problems in Ph.D. training result from the idiosyncrasies of individual faculty members. Professors are sometimes guilty of outrageous procrastination in dealing with graduate students and especially in reading papers or drafts of dissertations, as I know from my own observations and also from my own sins. One hears accusations that research directors have prolonged the Ph.D. process to retain the services of a gifted assistant, and a variety of other complaints by graduate students probably have some basis in the performance of individual professors.

Problems inherent in university customs are much more serious. Stanford makes no distinction between graduate and undergraduate faculty—very soundly, in my opinion; but in many departments half the tenured faculty members or an even smaller ratio are training most of the Ph.D. candidates, and a variety of serious problems result from this imbalance. The greatest single difficulty is probably the frequency with which members of the faculty, particularly the most able and outstanding, take leaves of various kinds. The graduate student whose dissertation director is on leave is obviously at a serious disadvantage. Examination of statistics on Ph.D. production by individual faculty members also suggests that a period of several years elapses after the professor's return from too frequent or too protracted leaves before he is once again effective in training Ph.D. candidates. It is surely impracticable and undesirable to eliminate all leaves of absence, especially sabbatical leaves, but it is possible that a more systematic approach could be made to the problems involved for individual Ph.D. candidates in periods of leave for senior professors. At any rate, the role of the faculty not only in production but also in the non-production of Ph.D.'s needs careful scrutiny by faculty members thoroughly familiar with what actually goes on.

Seriatim Comments upon Points in the Draft Report

Language Requirement. As a result of representations from Professor Schawlow in behalf of the Department of Physics, the Committee on the Graduate Division has recently recommended to the Academic Senate that the University requirement of at least one foreign language for the Ph.D. be removed and the designation of required language tools be left to the option of the individual departments. A copy of the letter to Professor Schiff transmitting this recommendation is attached.

Student Needs. The Policy Subcommittee of the Committee on the Graduate Division has been addressing itself to proposals in the statement by the Graduate Student Association that probably lay behind some of the points in Recommendation 4. Copies of two memoranda prepared by Professor Panofsky—informal summaries rather than official minutes—are appended to this memorandum to indicate current activities of the Policy Subcommittee. They illustrate quite adequately the direction of the Policy Subcommittee's recommendations and thinking, but a few further comments may be in order.

a. *Ombudsman.* The Subcommittee has felt, in direct opposition to the SES report, that an effective *ombudsman* must be outside the administrative hierarchy. It is therefore moving toward a recommendation to the Academic Senate that the AAUP proposal for a university *ombudsman* be acted upon and that the *ombudsmen* so designated be made available specifically to graduate students. The Policy Subcommittee feels, however, that *ombudsmen* should not obscure the obligation of graduate students to work through normal channels including department advisers and the graduate dean and that *ombudsmen* must not intervene in questions concerning academic performance, which must remain subject to the judgment of the departments.

b. *Adviser.* The Graduate Dean must obviously be available to discuss with individual graduate students, as in fact he always has been available, a variety of problems including the malfunctioning of departmental or university procedures. If I may speak for myself personally, I think that we should be very careful, however, in talking loosely about advising on the graduate level. I sometimes think, as I listen to discussions within the University, that I am the only individual at Stanford who really objects to the University's assuming an *in loco parentis* role. The vehemence with which our students inveigh against the University *in loco parentis* is exceeded only by the persistence with which they demand at every turn that it shield them from the realities of life.

Whatever justification there may be for such parental protection of undergraduates, there is none whatever with respect to graduates. Academic advising is the responsibility of academic departments. Financial emergencies constitute a special kind of problem with which the University does and must offer assistance, but present channels seem adequate. Like all the rest of us, graduate students are going to encounter a variety of problems in their personal and professional lives which are not easy of solution, but they should be encouraged to respond like mature adults and to use the channels of communication and advice that are part of professional life. In professional matters there is no substitute for a mature faculty adviser or a department chairman who is thoroughly familiar with the problems of a particular professional area. If faculty members or departments fail to do their job, then recourse should be had to the Dean or, in extreme cases, to an *ombudsman*. In personal matters the graduate student has available the same sources of help and advice as the rest of us.

Appointing one or more professional hand-holders to deal with graduate students will inevitably encourage the weaker brethren to demand that their hands be held. Encouragement of such dependency runs counter to the whole aim of graduate study. Furthermore, my experience as Executive Head of the Department of English convinced me that staff counselors sometimes prevent or even actively discouraged students from going to the faculty for advice—and conversely, of course, provided faculty members with an easy excuse for avoiding time-consuming and sometimes painful problems as advisers. That they provide this excuse is the greatest objection to special advisers.

c, d, e. *Records of Student Performance*. The recommendations that we maintain better records of students in progress and of students who leave are both sound and important. Two observations are perhaps pertinent. Some years ago Tim Wirth assumed responsibility, under the guidance of the Dean of the Graduate Division, for identifying the kinds of information needed as we developed more elaborate records through the use of computer techniques. These records include information not only about graduate students who come to Stanford but about students who apply and are accepted or rejected for admission, so that elaborate comparative studies can be made. In particular, computerized records should make possible detailed flow studies of graduate registrations by years or even by quarters so that we can identify speedily and accurately students who have dropped out of graduate programs. We had in mind the desirability of follow-up studies either through letters or through personal interviews with students who dropped out of Ph.D. programs. Somehow, the development of computerized records has been subject to a variety of frustrating delays, and the Policy Subcommittee now has on its agenda a meeting with those responsible for the computer program to find out just what the prospects are. In the meantime, it has seemed inadvisable to spend a great deal of time and money on doing laboriously by hand what can be done rapidly and easily as soon as the records are in order.

Granted that the material for research in depth exists, care should be taken that the methods used are fairly sophisticated. At several points, the draft report seems to contemplate simple correlations. These obviously need to be checked against the proper experimental controls, and, in general, sophisticated techniques of statistical analysis need to be used. A more fundamental proviso yet is probably that we need to avoid the obvious temptation to concentrate upon the unsuccessful candidates and study in equal depth those who are successful, looking vigilantly for the qualities that seem to make for success as contrasted with those that seem to make for failure. Studying both successful and unsuccessful candidates will also help to provide the kind of control upon too easy assumptions based upon simple correlations that was indicated just above as necessary. In short, the most sophisticated records are no better than the sophistication with which they are used, and the SES draft report probably needs to pay a little more attention to this aspect of the problem.

The current FYGA program now requires that we report to the Ford Foundation all doctoral candidates in the humanities and social science departments who drop out and indicate to the best of our knowledge their reasons for departure. Our experience suggests that a program of interviews with graduate students who leave, while desirable and important, will be less effective than the SES committee supposes. For one thing, disappointed or frustrated Ph.D. candidates are likely to be less than candid in talking to departmental advisers. For another, such students characteristically fail to reappear after a break between quarters rather than leaving during a quarter. They will therefore require follow-up techniques of the sort suggested above.

Teaching Experience. The Committee on the Graduate Division, and especially the Policy Subcommittee, have been concerned with the problem of building training in teaching into our Ph.D. programs. To be frank, their considerations have so far been ineffective for a variety of reasons, including difficulties encountered in individual departments. I therefore welcome Recommendation 5, and I would point out that we are in fact obligated by the terms both of NDEA fellowships and of the Ford grant to Stanford University to keep working on this problem.

Individual Programs. Recommendation 6 that students be screened as early as possible is sound and important. The policy recommended was adopted, in fact, by the Committee on the Graduate Division on April 18, 1965, and I think that our relative lack of success in implementing the policy may be instructive. Real progress has been made, especially in the Department of English, where a scheduling of the qualifying examination after the first year of graduate study has undoubtedly been an important factor in a major improvement in Ph.D. production. But I suspect that the procedures recommended by the Committee on the Graduate Division have largely failed of implementation simply because they are too complicated, and it is to be hoped that a simpler way of going at things should result from Recommendation 6. I quote from the minutes of the Committee on the Graduate Division for February 18, 1965:

> Mr. Heffner next proposed, on behalf of the Subcommittee, a plan for the early identification of Ph.D. candidates. It was the sense of the Committee that Departments should be encouraged to improve their machinery for making early decisions on the quality of graduate students, but that no single device was appropriate to all cases. The following statement was adopted by the Committee:
>
>> 'The Committee on the Graduate Division requests each department and organization granting the Ph.D. degree to develop a well-defined qualifying procedure for students working toward the Ph.D. degree. Such a procedure should include a careful screening early in the student's graduate career. At the conclusion of that screening, the department head or director of a doctoral program will forward to the Graduate Study Office data on those students who have thereby qualified, and those who have failed to qualify, and will supply a list of graduate students about whom no decision has yet been made.'

Calendar and Scheduling

I thoroughly concur that the semester system is much better adapted to graduate instruction than the quarter system, although I suspect that some compromise between the maximum flexibility so desirable and the problems of programming will have to be made in practice.

My own conviction that the semester system is better for graduate education results from my personal experience in conducting graduate seminars, and I suspect that the views of the members of the SES Committee are similarly personal rather than the result of empirical evidence. Such evidence needs to be collected. Furthermore, there seems no reason to believe that the recommendation has taken into account the fact that the semester system inevitably results in a serious downgrading of the summer quarter and that it is probably desirable that graduate students should spend all but the customary month's vacation in study. In other words, improvements in graduate training resulting from a change to the semester system might very well be counterbalanced by a serious loss in efficiency because the summer quarter would become very much less flexible and usable. This aspect of the problem needs more careful consideration.

Professional Socialization. The Policy Subcommittee has been working on the problem of an effective orientation program for graduate students, particularly because interested graduate students have been more successful in identifying a general need than in coming up with the specifics of such a program. It appears, furthermore, that some schools and departments already have fairly effective programs. The Committee has therefore circulated a letter to departments as a first step in getting information about what is going on, and a copy of this letter is appended. It indicates adequately the general direction of the Committee's thinking. The same letter also attempts to get information about the availability of facilities for informal contacts among faculty and graduate students of the sort indicated in Recommendation 9. This information, in turn, is viewed as part of a campaign to secure a higher priority in University building schedules for the Graduate Student Center recommended in number 10. Such a student center was one of the subjects of a general questionnaire circulated to graduate students several years ago, the results of which give reasonably clear guidance as to the kind of facilities desired.

Minority Students. The Committee on the Graduate Division has recently recommended to the Academic Senate that the provisions for admission to the University Division be liberalized in an effort to stimulate departments to experiment with alternate ways of finding candidates for graduate study among minority groups. A copy of the letter to Professor Schiff is attached.

In discussing minority problems, we need to exercise continual vigilance that we do not fall into the easy habit of identifying "minority" with "Negro." There are two other ethnic minorities, namely Mexican-Americans and Indians, to whom Stanford has a special obligation because of the concentration of these minorities in California or in other Western states from whom we draw many of our students. But more dangerous yet is the tendency to assume that the problems of these minorities are ethnic problems rather than the results of poverty or poor home environment or a depressed educational level or other factors that could be identified. My experience as director of Indian schools in New Mexico would suggest to me that there are indeed special problems that grow out of Indian cultures, though these are likely to be far more pervasive and deep-seated among those Indian tribes whose culture is still relatively intact than among Negroes or Mexicans, whose culture has been disrupted and Europeanized. But a vast majority of the problems occurring in minority groups are simply problems of disadvantaged groups whatever their race, and the troubles of the Negroes, in particular, are probably strikingly parallel to problems of poor whites who come from the same rural background as many of the Negroes or of white slum dwellers in the big cities who also parallel a characteristic Negro background. Such probabilities or qualifications must be kept in mind and investigated carefully if we are not to make serious mistakes in dealing with minority groups. There are white minority groups as well as other ethnic minorities.

Intermediate Degree. The desirability of an intermediate degree was thoroughly canvassed by the Committee on the Graduate Division several years ago at the instance of Mr. Lars Gantzel, a doctoral candidate in Linguistics who was then a member of the Committee. Dean Spurr of the University of Michigan, who has taken a national lead in this movement, also appeared before the Committee. For a variety of reasons the Committee on the Graduate Division finally rejected the idea after discussing it during several meetings. One reason was the fear that it might encourage the tendency of students to leave the campus to take up full-time careers before completing their dissertation that the SES draft report recognizes. The Committee on the Graduate Division felt that it is better to work on adequate financial support and exert pressure to keep students on the campus than to compromise with their tendency to leave before completing their degree.

University Special Programs. Recommendation 2 at the end of this section seems to me personally to confuse two totally separate objectives. University Division is a mechanism for enabling the University to admit students who do not have a formal American A.B. but have substantially equivalent training of one sort or another. It is, in other words, a means of safe-guarding the academic standards of the Graduate Division while allowing reasonable flexibility. Graduate Division Special Programs are, in contrast, intended to provide ways for interested graduate students to work out individual Ph.D. programs suited to their needs and interests. I have personally encountered no evidence that the present program is not adequate to the need for individual programs, although probably its existence needs to be better publicized, as the Committee recommends. The present Graduate Division Special Programs has no formal requirements whatever except that the applicant be good enough to justify the special attention demanded and that his program not be practicable within an existing academic department. Otherwise the candidate and his sponsoring committee are completely free to propose any kind of program or system of validating examinations that they wish, although the Committee on the Graduate Division which monitors these applications fairly carefully has always demanded that the program have some kind of unity and coherence. What seems to me to be needed is more initiative on the part of graduate students and faculty to use the program more effectively rather than more flexibility in the program.

Grades and Credit. I heartily concur in the substance in this section and in the recommendation at the end. Our present habit of demanding a B average for graduate work in most departments and then simply downgrading the B– so that it represents almost anything has got us into all kinds of ridiculous problems. These problems, by the way, are not peculiar to Stanford. I remember a discussion at Harvard University some years ago in which those present concluded that under the then existing system a B on the graduate level was certainly far less meaningful than an undergraduate B.

Course Work. I heartily concur with the views expressed in this section, and I am sure that the members of the Committee on the Graduate Division also agree. I suspect, however, that training in research methods through the medium of departmental seminars or individual research occurs in the first and especially the second year of graduate training far more commonly than the SES committee seems to suppose. In fact, I do not know off hand of a single department in which it does not occur. On the other hand, programs in the humanities and social sciences could probably be considerably strengthened if the student were encouraged to pick a dissertation topic and to start working toward it and especially to start thinking about it much earlier than many students in those areas now do.

*

Let me express in conclusion my appreciation of having an opportunity to comment upon the draft report. I have obviously taken liberal advantage of the opportunity afforded me–perhaps too liberal.

January 17, 1969

To: President J. E. Wallace Sterling, Stanford University
From: Dean, Graduate Division
Subject: Proposed Study of Education at Stanford

Dear Wally:

This letter is just to recapitulate what I said at the recent meeting of COUP.

I hope very much that we can recognize that Stanford is now a university in which half the students are on the graduate level and that, unfortunately, many of our most serious problems are on that level. I suggest that the proposed study of undergraduate education be extended, therefore, to include a study of all Stanford education, except perhaps in the purely professional Schools of Business, Law, and Medicine.

I have also come to feel very deeply during recent troubles that such a study will be meaningless unless we go beneath the usual statistics of who likes what, how much time is spent, and various other kinds of student reactions. I think that our basic problem is to decide ourselves what we want education to be and then to shape our educational program in terms of those objectives. For example, I believe that a man is a bad teacher if he does not inculcate in his students a healthy respect for facts and for scrutinizing the evidence no matter how successful he is in exciting them and drawing hundreds to his feet. Occasionally we have acted on this principle with considerable courage, but I suspect that a great number of the popular teachers today are more interested in excitement than in dispassionate study of the facts, and I certainly detect a great deal of evidence that our students are becoming much more responsive to a call to man the barricades than to examine the evidence.

Sincerely yours,

May 25, 1966

Virgil K. Whitaker

To: President J. E. Wallace Sterling, Stanford University
From: Dean, Graduate Division
Subject: Proposed Study of Stanford Education

I am sorry to be slow in drafting suggestions for the proposed study of Stanford education. But, even at this late date, I do wish to interject a few ideas—or perhaps crotchets—of my own.

First, with respect to the study of undergraduate education, I have three general comments:

1. Most important of all, as I remarked in an earlier memorandum to you, is some thorough consideration by a faculty body of the goals we are trying to achieve in undergraduate education and of the premises on which we are operating.

   I realize that this sounds a little bit like the old seven primary aims of education which were part of several of the rather uninspiring courses in Education that I took as a graduate student.

But the notion that one needs to know what one is trying to accomplish is thoroughly sound. To cite a specific example, I believe myself that every university class must inculcate in students the habit of examining evidence carefully and of paying strict attention to precise formulation of the truth. On the other hand, it is certainly necessary to arouse interest and to stir the students to discussion and formulation of their own ideas. The danger seems to me that in some areas of the University the obligation to truth gets lost in the excitement. Twenty years ago, on the other hand, I should have placed a very different emphasis as between regard for accuracy and regard for stimulation. In those days, too many courses were as dry as dust; today the danger seems to me too much excitement without a basis of fact. A clear understanding of premises is needed if we are to select wisely among alternative procedures.

2. The emphasis on general University requirements in the last study of undergraduate education seemed to me to encourage an unfortunate bifurcation between the general studies courses and the department majors. I think myself that many department majors produce a more genuinely liberal education than some of the rather superficial general studies courses. It seems to me doubtful, furthermore, that some of our elementary science courses produce a genuine understanding of scientific methodology or the respect for attitudes characteristic of the best scientists that should be outcomes of a sound education. There also seems to be some waste motion between general studies courses and departmental major programs, either in the form of duplication or of a failure adequately to prepare students majoring in the same area as the general studies course so that they can move effectively into a more advanced course in the major. My central thesis is that our whole undergraduate program must be thought of as the means to produce an educated individual, and more attention paid to the role and effectiveness of departmental majors.

3. I have been repeatedly worried during my career at Stanford by our tendency to vote on something on the basis of whether or not it is good when we should be voting on the basis of whether or not it is better than something else which could be accomplished with the same expenditure of time and money. We all know that Stanford's resources are not infinite, and yet we sometimes act as though they were. It seems to me possible, for example, that the money we contemplate spending on a house system with faculty masters and so on might produce more genuine results if it were spent either upon a senior essay or upon departmental comprehensive examinations. The whole senior colloquium program was certainly adopted without any adequate investigation of what educational alternatives might have been possible with a similar expenditure of effort and money. I would urge, therefore, that a committee making recommendations should include some estimate of costs and some clear indication of possible alternatives, granted various budgetary limits.

4. I hope that we can get some genuinely objective information on the achievement of our students, either in terms of standardized tests or in terms of their relative performance when they go on to graduate school. I hear a lot about the improvement in Stanford students. In the areas that I know best, I simply do not see the evidence. But perhaps I am wrong. I should like to see some definite evaluation, not of what our students bring to Stanford, but of what they take away.

I have already indicated my concern that we should study the effectiveness of our graduate program, particularly in what I think of as the Ph.D. producing areas. There are several kinds of investigation that I have planned to pursue as soon as staff and money and, above all space, are available. I should hope that these could be included in a general investigation.

1. We need above all to find out why the proportion of students who complete the Ph.D. degree is so low. The only way I know to do this is to make a systematic investigation of the

students in one or two classes admitted long enough ago so that there would be time for students progressing normally to have completed their dissertations. Such a study would involve use both of letters and of interviews and would inevitably be expensive. But I think that it might yield a great deal of useful information.

2. I am personally convinced that the success of an able student in getting his Ph.D. often depends to a very considerable extent on the ability of his faculty adviser not only to help but also to stimulate, sometimes by applying outright pressure. I think some interesting studies could be made of faculty effectiveness or involvement in the production of Ph.D.'s, going considerably beyond the statistics on Ph.D. production by individual professors which Fred Terman developed and which I am trying to keep up.

3. A very ticklish point related to the preceding, but one that should at least be considered, is whether we might in fact do better on the Ph.D. level if we expected some professors to spend a high proportion of their time directing Ph.D. candidates and others to spend most of their time in teaching undergraduate courses. I would myself oppose any system that restricted mature faculty members from directing graduate research, but I suspect that our present custom of pretending that all do the same amount of graduate training simply leads to very serious inequity in the loads of various faculty members and to relative inefficiency in the training of graduate students.

4. We have various kinds of M.A. programs going at Stanford, some of them primarily as consolation prizes for students who cannot make the Ph.D. We need some definite information as to the value of these programs and particularly as to what happens to those who earn the Master's degree without going further. This study again would involve a good deal of time and detailed investigation.

5. On the level of what I called premises above, we need some faculty discussion of just what the Ph.D. means, and particularly of what the Ph.D. dissertation is expected to represent. Granted that the dissertation must be an original contribution to knowledge, there seems to be wide range between various universities and even more range between various disciplines within the same university in what is expected in a Ph.D. dissertation. There is probably considerable disagreement even within department faculties. The basic problem is that we seem to be in a period of transition from the old notion of the Ph.D. dissertation as the equivalent of a finished and polished book to the attitude characteristic of some of the sciences that it is really nothing more than a thorough exercise in research methodology.

June 24, 1966

To: Professor Leonard Schiff, Chairman Academic Senate
Physics Department

From: Virgil K. Whitaker, Associate Provost and
Dean, Graduate Division

Subject: Foreign Language Requirement for the Ph.D.

At its meeting on Thursday, January 9, the Committee on the Graduate Division voted unanimously to recommend to the Academic Senate that the University-wide requirement of at least one foreign language for the Ph.D. be abolished and that Ph.D. language requirements be handled at the discretion of each department.

The Committee was impressed by the necessity and value of foreign language training and knowledge on the part of graduate students, but it agreed that the needs as they relate to the different disciplines are exceedingly variable. In particular, it was influenced by the arguments advanced by Professor Arthur L. Schawlow, speaking for the Department of Physics in a letter dated December 2, 1968, that the present use of English as the international language of physics makes training in a foreign language unnecessary and that the mounting pressures for the graduate students' time make the kind of perfunctory mastery of a foreign language achieved by Ph.D. candidates an undesirable diversion of time at the graduate level. The Department of Physics concedes that a much better case can be made for a foreign language as part of a general education. This issue should be faced, however, on its own merits.

The case of Physics was considered to be probably a singular one, and therefore the Committee expects that, in general, other departments may not substantially decrease language requirements. Nevertheless, the Committee feels that this step is a correct one in the direction of increasing flexibility in graduate study and in decreasing the time required towards obtaining a Ph.D.

January 13, 1969

To: Louis John Reith, Professors Moffatt Hancock, James Howell, Gavin Langmuir

From: W. K. H. Panofsky

Subject: Summary of Meeting of the Policy Subcommittee of the Committee on the
Graduate Division, Thursday, December 19

The agenda of my memorandum of December 17, 1968, were followed in general terms.

1. Consensus was reached to approve the Physics Department's request for waiver of language requirement. It was agreed that Panofsky would write a letter to Dean Whitaker giving the committee's consensus and recommending to the Committee on the Graduate School that it endorse a request to the Academic Senate to waive the language requirements as a matter of University policy and delegate this matter to departmental discretion.

2. The reformulation suggested by Professor Crawford, Chairman of the Registrar's Advisory Committee, for the conditions of admissions of new students to the University Division was approved and Panofsky will transmit this consensus to Dean Whitaker.

3. The question of providing orientation to entering graduate students was discussed. Panofsky will write a draft letter dealing with this subject to be circulated to the members of the Policy Subcommittee. This letter will be designed for transmittal by Dean Whitaker to department chairmen.

4. The question of casualties on the way to the Ph.D. After extensive discussion it was decided that Dean Whitaker would circularize his statistical material bearing on the subject as it applies to Stanford students and also the material gathered by the Danforth Foundation as it applies nationally to members of the subcommittee. Professor Howell agreed to prepare a memorandum for use of the subcommittee giving his views on specific actions which would be designed to alleviate this problem.

5. There was discussion of the Ombudsman system. Panofsky informed the group about the existence of the Ombudsman system as presently sponsored by AAUP, and indicated that a motion might be introduced to the Academic Senate to have the Ombudsman system taken over by the faculty. Mr. Reith agreed to prepare a memorandum for the use of the subcommittee indicating which kind of graduate student problems and grievances might be referred to an ombudsman and which problems would not be suitable for such a system.

6. There was brief discussion on the question of graduate student advising and it was agreed that at a future time a departmental survey was indicated. Dean Whitaker will prepare a draft memorandum to be addressed to department chairmen on the subject.

December 19, 1968

To: Policy Subcommittee of the Graduate Division: Louis John Reith,
Professors Moffatt Hancock, James Howell, Gavin Langmuir
From: W. K. H. Panofsky
Subject: Summary of Meeting of the Policy Subcommittee of the Committee on
the Graduate Division, January 13, 1969

In addition to covering some matters left over from the previous meeting the agenda of my letter of January 9, 1969, were followed in general terms as follows:

1. The letter to go to department chairmen on the question of orientation of entering graduate students was reviewed, including the recent amendment by Dr. Whitaker on the subject of availability of graduate student meeting places. Some minor changes were suggested in the letter including proposing a deadline of February 14 for replies to the letter. It was agreed that replies would be circulated to all members of the subcommittee when received. In addition Mr. Peter Burcheyns is going to compile the data as received and prepare an analysis for the committee's use.

2. Dr. Whitaker introduced a draft letter addressed to the Provost on the problem of encouraging minority enrollment in the graduate school as was discussed in the meeting of the Committee on the Graduate Division on Thursday, January 9. This letter should propose to the Provost that the faculty be circularized reaffirming that University policy on minority enrollment applies to the Graduate Division also and should request faculty initiative on implementation. The letter will be sent to the Provost incorporating some suggestions from the committee.

3. The Ombudsman system as applying to the resolution of graduate student grievances was discussed. The letter by Mr. Reith dated January 9, 1969, to Panofsky and Whitaker was used as a basis for some

of the discussions. The question was raised whether the Ombudsman system will be discussed in the forthcoming SES report on governance of the University. Panofsky will attempt to find out if it is included.

After some discussion the following consensus was reached: Panofsky will draft a letter for subcommittee review which will eventually constitute a request from the Committee on the Graduate Division to the Academic Senate to (a) make the Ombudsman system an official University function rather than an AAUP proposal; (b) establish guidelines defining the role of the Ombudsman as it relates to graduate students; (c) publicize the Ombudsman system to the University community. The following general consensus was reached on such guidelines:

A. It should be clear that the Ombudsmen will not be officers of the University nor will they have any in-line authority; they would act only as individuals attempting to assist in particular difficulties.

B. In general Ombudsmen should not be encouraged to intervene in problems concerning grades or other indices of academic performance.

C. It should be clear that the Ombudsman role is non-exclusive and in general students should be encouraged to address their problems to the department chairmen and the deans when this appears practicable to them.

D. The hope should be expressed that the Ombudsman system as it applies to graduate students would be used to a decreasing extent as the system of graduate student advising within the department would improve.

E. Although the role of the Ombudsman in solving minority grievances should not be excluded it should be made clear that the minority coordinator would in general be involved in settling problems.

4. There was further discussion on the statistics relating to graduate student drop-outs. It was agreed that at a future meeting Dr. Whitaker would make an arrangement to have someone concerned with computer programming of University records talk to the subcommittee about the work as it relates to graduate students.

5. There was further discussion on a possible central role the University administration could play in encouraging minority enrollment in the graduate school. The following questions were discussed:

A. Can the undergraduate office established for minority recruiting be extended in its functions to include graduate student recruiting? Although the view was expressed that because of the specialized nature of graduate study extending the function of the undergraduate office might prove difficult, Dr. Whitaker agreed to investigate this possibility.

B. The question of summer institutes to involve faculty members from smaller universities, particularly in the South, in the work of Stanford was discussed. This was thought to be an excellent way of providing enduring contacts between Stanford and the minority student population. Panofsky will investigate what sources of funding outside the University might exist for such purposes.

C. The question of the role of present minority students in recruiting future minority graduate students was discussed.

D. Dr. Whitaker will investigate whether Mr. Simmons could address himself to these matters before the next meeting of the Policy Subcommittee.

6. A draft letter from Dr. Whitaker on the subject of advising graduate students, addressed to department chairmen, was distributed. Subcommittee members will give comments on this letter by phone to Panofsky who will in turn transmit them to Dr. Whitaker to assist in preparing a final letter.

January 13, 1969

To: Professor Leonard Schiff, Chairman Academic Senate
Physics Department

From: Virgil K. Whitaker, Associate Provost and
Dean, Graduate Division

Subject: Modification of rules for the University Division

At its meeting on January 9, 1969, the Committee on the Graduate Division voted to recommend to the Academic Senate that the present requirements of the University Division be amended by adding a sentence to the stipulation for *New Students* as stated on page 25 of the Stanford University bulletin *Information 1969*. With this addition the complete paragraph would read as follows:

> "*New Students*—To be eligible for admission to the University Division, new students must have completed at least 87 quarter units at an educational institution of recognized standing with a grade average no lower than the equivalent of a B average at Stanford. Exceptions may be made in special cases where, for some reason, a candidate has been unable to follow a course of study appropriate to his ability, but has succeeded in demonstrating high professional skills in his field of interest."

The intention of this revision is to make it possible to use the University Division as a means of admitting disadvantaged students on a more flexible basis. The Committee considers it to be a particular advantage that through this admission mechanism these students, and particularly those among minority groups who have already held responsible positions in American society, can upgrade their training without being hampered by excessively formal requirements. In other words, the Committee believes that the proposed revision may be a means of encouraging and facilitating the continuing experimentation in the admission of disadvantaged students to graduate work that current problems of American society so obviously require.

I understand that Professor F. W. Crawford plans to introduce the same recommendation into the Registrar's Advisory Committee at its next meeting. I recommend, therefore, that action upon this recommendation by the Committee on the Graduate Division be deferred until the Registrar's Advisory Committee has a chance to report.

January 13, 1969

To: Department Chairmen

From: Virgil K. Whitaker, Associate Provost and
Dean, Graduate Division

Subject: Orientation of Entering Graduate Students

The Policy Subcommittee of the Committee on the Graduate Division is carrying out a number of studies aimed at understanding the causes of the appallingly high drop-out rate of graduate students on the way to the Ph.D. and dealing also with various problems of graduate student life identified by the Graduate Student Association. The object of these studies is to make recommendations aimed at improving the quality of the graduate students' environment and to reduce the high drop-out rate, thereby conserving the University's and students' resources.